The RUBBER AGE

TWICE-A-MONTH

Vol. 21 SEPTEMBER 25, 1927 No. 12

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INCORPORATED

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HE flicks the ash from his cigar into a receiver which was plated with Copper Cyanide and Cyanegg. It may have a nickel finish. In that case Nickel Salts and Nickel Chloride were needed, and kept shining with polish containing Denatured Alcohol.

John resumes with a statement that fire regulations today are very strict. Even the office partitions and other woodwork must be fireproof. "But," he adds, "treating these materials with R & H Chemicals will solve that problem."

Meanwhile the stenographer is busily taking notes. The paper on which she writes is produced with Chlorine and Formaldehyde, not to mention Alum and other materials. Even the eraser on her pencil is kept flexible and efficient through the use of R & H rubber chemicals.

The meeting adjourns. The janitor's force then takes charge, their cleaning equipment including Germicides made with P A C Formaldehyde, or perhaps Paradichlorobenzene.

(See John next on his way to the golf club)

The ROESSLER & HASSLACHER CHEMICAL CO.
709 Sixth Avenue, New York, N. Y.

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The RUBBER AGE

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Really Convenient Statistics

AS is customary in each issue of THE RUBBER AGE, the latest statistics have been added to many of the important tables which appear in the statistical section, beginning this time on page 633. This plan of making essential statistics thoroughly convenient for an industry appears to be unique with this publication. If any reader who is not entirely familiar with it will read the explanation on page 633 and examine a few of the tables, he will probably find himself joining the large number in the rubber industry, and in banks and other places as well, who automatically reach for the latest issue of THE RUBBER AGE when rubber statistics are needed. The twice-a-month appearance of this journal naturally enhances what is already a good plan. Other statistical tables will be added if good sources can be developed.

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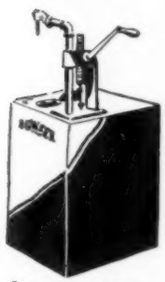

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Write for Technical Bulletin

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The RUBBER AGE

VOL. 21 NO. 12 SEPTEMBER 25, 1927

All Rubber Technologists Invited to Join Local Sections

Members of the Rubber Division of the American Chemical Society Vote at Detroit to Form Four or More Local Sections in Which Other Technologists May Hold Associate Membership—H. L. Fisher Elected Division Chairman for Coming Year

WHAT was generally conceded to be one of the most interesting and important meetings of the Rubber Division of the American Chemical Society was concluded on September 9 after a three-day session at the Book-Cadillac Hotel in Detroit. Not only was the attendance of 250 above the average but the interest in the papers and the Division's business meeting was unusual. This eleventh anniversary meeting of the Rubber Division will probably be remembered chiefly for the action which was taken on the proposal that the scope and membership of the Division be considerably expanded through the formation of local chapters and the admission as associate members of rubber technologists other than chemists.

H. L. Fisher
Elected Chairman, Rubber Division

The program, as given in the last issue of THE RUBBER AGE, consisted of five papers constituting a reclaimed rubber symposium, nine other papers on aging and testing of rubber, the business meeting, a banquet and trips to Detroit industrial plants.

The papers, of which abstracts were given in the last issue of this journal, were well received by the members. The papers on reclaimed rubber had brought many reclaimed rubber manufacturers, chemists and salesmen to the meeting. That interest in the subject of using reclaims was widespread was apparent from the number of questions asked and the discussion which followed each of the five papers constituting the symposium.

The papers which followed the symposium were also received with much interest, many of them being accompanied by charts or slides. D. E. Pearsall of the Western Electric Laboratories distributed multigraphed copies of his paper on "The Influence of the Sulfur-Rubber Ratio on the Physical Properties of Hard Rubber" in order that his audience might follow him to better advantage by referring to the charts and other data included in his manuscript. This method of presentation found wide approval and the opinion was expressed that it might be used to advantage more frequently since it obviates the necessity of slides which at best are hard to read unless exceptionally well-made and projected.

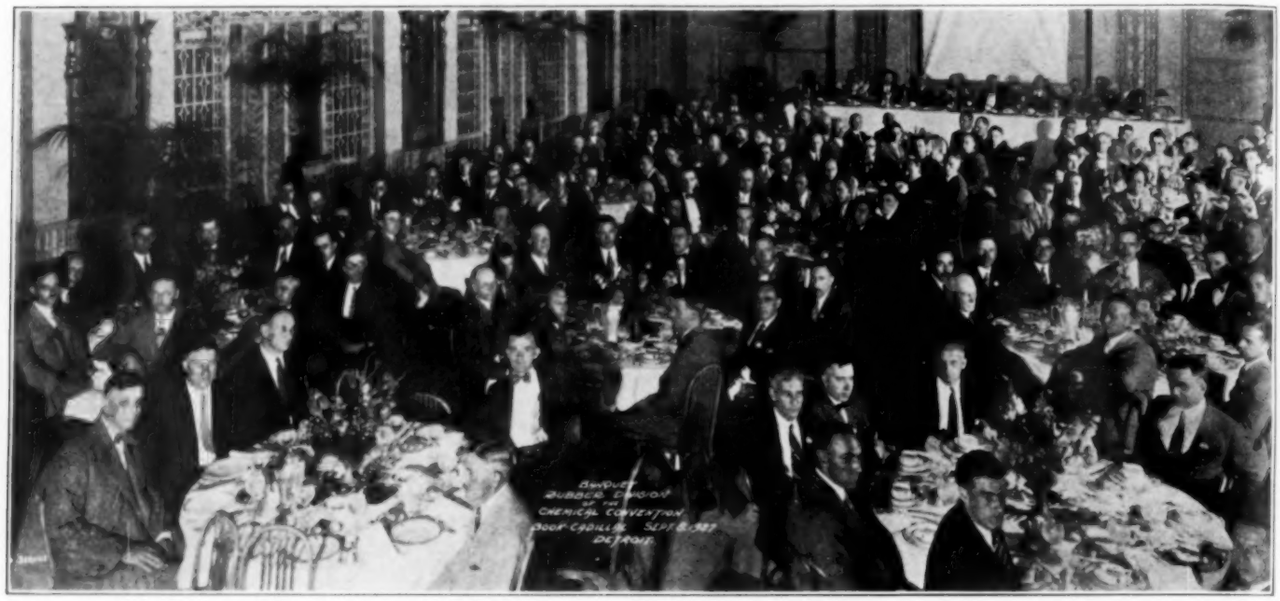
A feature of the Detroit meeting was the more general discussion which followed the reading of nearly all the papers. While more extensive than usual, this discussion might have been even more widespread if fewer papers had been scheduled. It was clearly demonstrated, however, that many chemists would ask or volunteer information if better opportunity were offered. This idea was partly responsible for the favorable action on the proposal to have frequent sectional meetings.

On the first day of the session all of the papers on reclaimed rubber were completed as well as several originally scheduled for the next day. Following the business meeting on Thursday, the remaining papers were read with the exception of two which had to be carried over to Friday morning and were heard by a somewhat diminished audience.

At the business meeting on September 8,

A. H. Smith
Elected Vice-Chairman, Rubber Division

Eleventh Anniversary Banquet of the Rubber Division



This Photo Shows Only Part of the 200 Members and Guests Who Attended the Banquet

the following officers and executive committee were elected for the coming year:

CHAIRMAN

H. L. Fisher, *United States Rubber Co.*

VICE-CHAIRMAN

A. H. Smith, *Rubber Service Laboratories Co.*

SECRETARY

H. A. Simmons, *Akron Municipal University.*

EXECUTIVE COMMITTEE

H. A. Winkelmann, *Philadelphia Rubber Works Co.*

Stanley J. Krall, *Fisk Rubber Co.*

W. G. Nelson, *Morgan & Wright.*

E. R. Bridgwater, *E. I. duPont de Nemours Co.*

John M. Fry, *Goodyear Tire & Rubber Co.*

The report of the crude rubber testing committee was read by the chairman, J. E. Partenheimer, and was accepted. It was decided to distribute reprints of this report following its publication in the trade press, it being especially desired that the industry should be fully familiar with the committee's work since it is proposed to continue it and the companies will be asked to contribute about $6,000 to finance it.

The most important action taken at the business meeting, and probably the most important action taken by the Division in recent years, was to approve the formation of local sections of the Division in three or four rubber centers and the admission to membership of technologists who are not chemists. It was also voted to have all papers read at such meetings reprinted and bound for convenient distribution throughout the Division. This action was taken to broaden the scope of the Division and attract technologists whose problems are related to those of the rubber chemist.

Mail Vote Had Been Taken

In introducing the subject, R. P. Dinsmore, retiring chairman of the Division, reviewed the needs of the Division as discussed at the spring meeting in Richmond and by the executive committee since that date. It was believed (1) that the Division should widen its field by more extensive presentation and publication of papers on rubber technology, (2) that more frequent meetings should be held to permit adequate discussion, and (3) that separate publication of such papers on rubber technology should be provided for.

In order to sound out the attitude of members, a mail vote was taken previous to the meeting which showed that 96 per cent of those who replied were in favor of the first of these proposals, 83 per cent favored the second, and 76 per cent favored the third.

The plan as a whole was thoroughly discussed and it was brought out that each local group should have its own organization responsible to the Rubber Division, meetings should be held every month or every two months and the membership of the local sections should include the regular member of the Division in addition to associate members who are rubber technologists but not chemists. Papers prepared for the local meetings would be reviewed by officers of the Division and such papers as appear to warrant it could be held over to the annual or semi-annual meetings of the Division.

On the subject of publication of the papers read before the sectional meetings, it was felt that this would be possible without interfering with the policy of publishing most of the chemical papers in *Industrial and Engineering Chemistry*, the official organ of the American Chemical Society. It was suggested that a rubber supplement could be formed to take care of the printing of the local section papers as well as chemical papers which were not used in the Society's journal. Dr. H. E. Howe, editor of the latter, estimated that the cost of such special publication would be about $1,300 per year, which could be met by the dues of the associate members.

Four Cities for Local Sections

Details of putting this new policy into effect were left to the new executive committee. It is thought that Akron, New York, Boston and either Los Angeles or San Francisco would be the cities selected for inaugurating the plan.

The Rubber Division banquet on the evening of September 8 brought together almost 200 members and guests. A good musical program was provided and Dr. Karl Arnstein spoke on the development of Zeppelin airships.

The 1928 spring meeting of the Rubber Division will be held in St. Louis and will be a joint session with the Organic Division of the American Chemical Society. The subject will be "polymerization."

No. 1 of A Series of Articles on

Purchasing Supplies for the Rubber Factory

Some Problems in Buying Fabrics

The Author, a Purchasing Agent Who Is in the Market Every Day for All Sorts of Supplies, Outlines Some of the Things Which the Successful Fabric Buyer Must Know

THE annual rubber bill of the rubber manufacturers of the United States runs in excess of $300,000,000. Next to it in size is the cotton bill; in fact, the buying of cotton fabrics in the rubber industry is delegated to purchasing specialists in the large companies and comes under the direct supervision of the chief executives in medium-sized and small rubber plants.

The variety of cotton fabrics used in the rubber trade covers a wide field. The tire industry uses cord fabric in various constructions: square woven duck in several weights for chafer, bead flipper, and tube patches; wide osnaburgs for flap filling; flannels for flap covering; sheetings for bead cover; breaker to some extent; and enamelling duck for liners. The auto topping trade uses enamelling duck and drills in wide widths. Mechanical goods plants use hose and belting duck, which is the trade name for special constructions designed for use in rubber hose and belting. The proofing and raincoat trades use 3.60 and 4.00 yd. sheetings, drills, and many fine count cloths.

Variety of Fabrics in Footwear

Rubber footwear probably employs a larger variety of fabrics than does any other section of the rubber industry. In woven fabrics, light and heavy rubber shoes are constructed with boot duck (a construction of hose and belting), osnaburgs, sheetings, and print cloths. Linings are made from knitted fleeces, with a percentage of wool shoddy in some cases, stockinette in various weights, and in the cheaper grades from woven flannels. The novelty overshoe line has brought in many new fabrics in colors of both knitted and woven constructions.

The canvas shoe line known as tennis employs a different group of fabrics. Numbered ducks, army ducks, and double filled enamelling ducks furnish the outside fabric for the various grades and drills and sheetings comprise the linings.

While some of the large tire mills are no longer using cord fabric on account of the development of running the cord from spools direct into the calender or into dipping tanks, the volume of cord fabric used is still very large. The first point to determine is the construction of the cord. First quality fabrics are generally made from 23's yarn, 15 ply, spun 5/3, that is, five threads of 3 ply each are wound together to make the cord. Second quality fabrics for small tires are now generally made from 13's 3/3, which makes the fabric lighter in weight per square yard.

The next point to consider is the number of ends per inch in the warp. Some plants use 23 ends, some 21, and there are fabrics made with as high as 26 ends per inch. The more ends there are, the higher the cost of the fabric, and the more closely woven. The higher the end count, the less the pentration of the rubber compound will be. The present tendency is to make the fabric more open to insure more rubber penetration which makes for less carcass separation and a better union between rubber and cotton.

The question of "pick" is the next consideration. This specifies the number of filling threads per inch. The purpose of the filling thread in cord is merely to hold the cords in place during rubberizing, and the less number of picks there are, the less chance for friction between cross threads in the tire. Two and one-half pick construction is now generally used, although some mills prefer 5 or 6 pick cord on account of its better calendering qualities.

Specifying Length of Staple

Having determined the cord end, and pick construction, the grade of cotton and length of staple should be specified for the various grades of fabric. First grade fabrics are made from 1¼-inch, 1⅛, or 1 1/16 staple peeler cotton, although Egyptians are sometimes used in the large bus and truck tires. Practically all fabrics are made from karded yarns, the combing process having been found unnecessary and often detrimental to the stretching qualities of the fabric.

Second grade fabrics are always made from karded peeler yarns, of shorter staple, and sometimes inferior dark cotton is used. In the strictly "price" tires, drop-ply fabric is employed. In the spooling of cord yarns, breaks occur, and every tire fabric mill accumulates spools of seconds or drop ply, which means that the cords are not full count. These are accumulated and made into fabric for use in the cheapest grade of tires.

Width and length of rolls must be determined by mill conditions. Large tire mills use 250- to 500-yard rolls of fabric because they are equipped to handle them with special hoists and conveyors. They afford longer calender runs, and reduce change time at the bias cutter, as well as producing a minimum of waste. Width is determined by the calender equipment. Most tire fabrics are made from 54 to 60 inches wide.

In the present era of hand to mouth buying, tire fabric is rarely purchased more than three months in advance. One month is almost the minimum time to insure deliveries as most of the tire fabrics are made in the South and require from a week to ten days to reach points North and West. Of course, the question of how far to buy ahead is determined largely by two factors, the condition of the cotton market, and how far the mill is sold ahead. In a time like last December when cotton was selling below the cost of production, there was more justification for buying

ahead than in the time like the present when the tire industry is entering upon its dull season and cotton prices are high. At the time this article was written, most purchasing agents were waiting until the next government report early in September before placing forward commitments.

Prices of cotton fabrics do not follow the raw cotton market on every advance or reaction. They always lag behind when the market is dropping and similarly advance only when a market rise is sustained over a period. For example, at the present time, when cotton is selling around 21 cents, fabrics can still be bought on an 18- to 19-cent basis. Competition among the cotton mills is a factor. If the mills are sold up and do not need business, prices offer more resistance than if the reverse condition is true.

Insuring Delivery When Needed

It is essential that the buyer keep in close touch with his sources to insure deliveries when he wants them, as it has frequently happened during the past year that rubber factories could not get deliveries on various grades on account of the mills being sold up three or four months ahead. The supply of fabric in the spot market and in second hands for re-sale is always small and can never be counted upon with any degree of certainty.

Very few cotton mills sell direct. Most of the business is done through selling agents located in the big centers such as New York, Boston, Chicago, and Akron. Some buying is also done through brokers. Experience has shown that on fabrics which are specially designed for the rubber trade, mills have preferences as to makes, and the most satisfactory results are obtained by dealing direct with selling agents. However, the rubber trade also uses many numbers which are staple cotton numbers, such as 38½" 5.35 sheeting, 64x60 count. In purchasing such numbers, the broker can cover the market much better than the purchasing agent and performs a real service in getting the buyer a true picture of the market and prices.

On enamelling ducks, drills, and other widely used rubber constructions, the mills usually specify the "put up" of the goods, that is length of pieces, length of rolls, markings, etc., to make for the most economical storing and running of fabrics.

Laboratory Tests on Fabrics

The chemical laboratory usually takes a sample of each shipment and tests the fabrics for count, weight, tensile strength of warp and filling, and several rolls may also be run over the inspection table to detect the percentage of oily threads, misweaves, knots, and other imperfections.

Tire fabrics, hose and belting duck, and other heavy fabrics are usually sold by the pound. Army ducks, drills, sheetings, and enamelling ducks are sold by the yard, but they are all based upon a pound price which is computed by taking the raw cotton price, adding the mill charges for labor, overhead, waste, etc., plus the selling agent's commission, to arrive at the price.

Terms are generally arranged to suit the buyer, but such concessions are always in the price. Many constructions are sold only on a net 10-day basis, f.o.b. mill. But many rubber factories require a delivered price so that the goods can be charged to the mill with freight included. In such cases the freight is added and included in the price. Some mills sell f.o.b. mill with a standard freight allowance which saves computing freight to each point.

Terms are variously made at 2%, 10th following month; 2%, 10 days, 60 extra, or 3%, 10 (1 per cent being equivalent to 6% money at ½% monthly); and net 10 days plus 1% for 60 days. Many rubber manufacturers like to take advantage of the 60-day clause especially when their goods are sold on long terms. It also enables them to get the goods finished and manufactured into merchandise before payment.

The question of the dyeing and finishing of cotton fabrics is an important one to consider, especially for the buyer of footwear, auto topping, and raincoat fabrics. Sulphur dyes are generally used for rubber work owing to their fastness to vulcanization. The dye must also be free from copper salts, which have a deteriorating effect upon rubber. Uniformity of color is important as well as finished widths. Many finishing plants specialize on rubber work, and once the purchasing agent has educated his dye house to finish his fabrics according to his needs, it is good policy to maintain the connection. Most rubber factories buy the cotton fabrics in the gray state and have them finished themselves for this reason.

The manufacture of stockinette for the rubber footwear trade is so specialized that the entire requirements of the industry are taken care of by five or six established knitting mills in New England. Karded yarns are mostly used, although some of the fine numbers are made with combed yarn. The pieces are made either single or double thread construction on 26" to 30" heads so that when finished and split they run from 52" to 54" in width. The dyeing and finishing is sometimes done under the same roof where the goods are made, but more often in finishing plants which specialize in this work. The nets are dyed in rotary dyeing machines in circular form, then are washed and dried, the edges gummed to prevent curling in calendering, split, and rolled up on a tentering machine to maintain an even width. These goods are sold by the pound, and are bought on contract, usually three months ahead, deliveries being specified several weeks in advance.

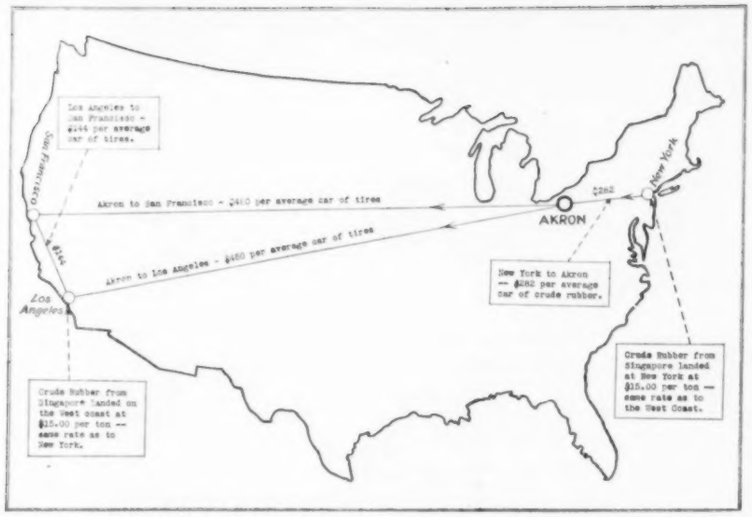
Numbered Ducks in Footwear Trade

Numbered ducks are used in the rubber footwear trade on some of the higher-priced athletic shoes. They are called numbered ducks because they are designated by numbers from 1 to 12, running in weight from 22 to 11 ounces per square yard, and the widths varying from 144" to 26". They are used for awnings, tents, sails, and many other purposes. Their number and variety is so great that all prices are figured from a master list which gives the price per yard for each style. As the cotton market fluctuates the various constructions are quoted at so much "Off the list" which makes it easy to compute the market price on any width or number of duck.

The buyer of cotton fabrics must be a constant student of the market in all its phases: raw cotton consumption, crop condition, size of crop, ginning figures. He must know all the mills which make the various constructions he requires, have them graded as to preference for quality, know something of their capacity to serve his needs, and conduct his dealings with selling agents on such a plane that he will get the breaks on deliveries and prices when he needs them. Mills will cooperate with valued accounts to the extent of making up goods ahead to be taken within a reasonable time, and store them until wanted. The purchasing agent must learn to analyze market opinions and judge upon their worth from his experience. Oftentimes he can serve his needs better by visiting the mills and finishing plants and judge their capacities to serve his needs from first-hand observation.

Other Articles on Purchasing
Will Appear in Succeeding Issues
Covering a Variety of Supplies

Western Plants *for* Tire Companies Mean *a* Great Saving *in* Cost *of* Distribution


Los Angeles to San Francisco — $1.65 per average car of tires.
San Francisco
Akron to San Francisco — $410 per average car of tires
$282
AKRON
New York
Akron to Los Angeles — $480 per average car of tires
Los Angeles
New York to Akron — $282 per average car of crude rubber.
Crude Rubber from Singapore landed on the West coast at $15.00 per ton — same rate as to New York.
Crude Rubber from Singapore landed at New York at $15.00 per ton — same rate as to the West Coast.

The approximate freight figures shown on the above map reveal some of the savings that the Los Angeles tire plants will enjoy over Akron plants in serving Western motorists. Crude rubber from the Middle East is landed in New York and Los Angeles at about the same cost. The New York to Akron freight is saved as is the high cost of bringing tires from Akron to Los Angeles. On shipments to other Western cities the Los Angeles plants will have such advantages as are illustrated in the case of San Francisco

By Locating Branch Factories in Los Angeles, the Big Tire Manufacturers Are Saving Freight on Both Crude Rubber and Finished Goods While Serving a Steadily Growing Market

IN an effort to place the sources of production close to the consumer so that freight and other distributive costs may be saved, the larger American rubber manufacturers have been looking to the Pacific Coast as a logical location for the establishment of branch factories. In less than two months this westward movement has become an important feature of the rubber industry. Within this short space of time two of the largest rubber companies in the country have purchased land in the vicinity of Los Angeles, California, and are now reported to be engaged in the erection of factory buildings. These two companies are the B. F. Goodrich Co. and the Firestone Tire & Rubber Co., both of Akron. These new branch factories, like the parent companies in Akron, will be neighbors of the Goodyear Tire & Rubber Co. which has had a plant at Los Angeles since 1919.

Of late years a great deal has been said about the advantages of decentralization of industrial processes with a view to saving freight. In the case of the tire factories the possibilities of freight saving are particularly important, since they apply not only to distribution of the finished product, but also to crude rubber used in manufacturing that product. By erecting plants on the Pacific Coast, the rubber companies will be able to receive their crude rubber from the Middle East via the Pacific Ocean, rather than having it enter Atlantic ports and then be hauled by rail to Akron, as is now the case. So far the Pacific ports have not received very large rubber consignments. During June of the current year only 1,647 long tons of crude rubber entered Pacific ports as compared to 29,797 long tons coming into Atlantic ports.

This condition, however, will probably be considerably altered when the Goodrich and Firestone plants in Los Angeles begin to operate. The Goodrich factory is now being built at a cost of approximately $4,000,000 and will have an initial daily capacity of 500 tires and 7,500 tubes. The Firestone plant is being built at an estimated cost of $7,000,000 and it is hoped that by April, 1928, the factory will turn out 5,000 tires and 7,000 tubes daily. The Goodyear Tire & Rubber Co., of Akron, also has a branch factory in California, having established there in 1919. This plant has a capacity of several thousand tires and tubes per day.

West of the Rocky mountains the branch factories of the largest tire companies will find several smaller but nevertheless important tire factories already operating and supplying a fair share of the trade. These include the C & L Tire and Rubber Company and the Coast Tire and Rubber Company, both at Oakland, Cal.; the Columbia Tire Corp., at Portland, Oregon; the Keaton Tire and Rubber Company at San Francisco, Cal.; and the Samson Tire and Rubber Corporation at Compton, Cal. The Gates Rubber Company of Denver is an important factor in the western tire trade.

While three of the largest rubber companies are expanding in California, the General Tire & Rubber Co. is engaged in erecting additions to its plant in Akron that will increase tire production to 3,000 a day; and the Gates Rubber Company, of Denver is preparing to build a power unit with a capacity of approximately 350,000,000 pounds of steam per year. Moreover, the Canadian Goodrich Company, a subsidiary of the B. F. Goodrich Company, is arranging for the expansion of its plant in Kitchener. New additions to the present factory buildings will cost about $150,000.

The general westward movement of the rubber manu-

facturers, together with the considerable expansion that is taking place in the main plants, is a pretty fair index of the healthy condition of the industry. As has been pointed out, it is not only the large companies that have been expanding, but within the past year even the smaller plants have made factory additions and improvements. It would appear, therefore, that the entire American rubber industry is staging a fairly prosperous "come back" after the lean year of 1926.

Standard Threads For Hose Couplings

A national standard for screw threads for fire-hose couplings is rapidly being adopted throughout the United States, according to the American Engineering Standards Committee. About 40% of the total number of fire-protected cities and towns in the country have adopted the standard, and the process of converting the existing equipment to the standard dimensions is said to be progressing.

This standard deals with the threaded parts of couplings from 2½ to 4½ inches and applies to the larger sizes of hose couplings used on fire lines outside and inside office and factory buildings. A further step has now been taken, according to the American Engineering Standards Committee, with the recent appointment of a representative special committee in regard to the proposed establishment of standards for small hose couplings, in sizes from ½ to 2 inches, as used in factory and office buildings.

Rubber Lining for Tube Mills

It has been found that relining of a tube mill with rubber sections has a number of advantages over the more usual method, both in the matter of simplicity and time saving. The replacement of a metal or stone lining requires from two to three or four days, while relining with rubber sections can easily be effected in a few hours. Metallic linings, moreover, need to be renewed twice as frequently as rubber, so that the use of the latter means a saving of two days' running time per annum at the most conservative estimate.

This saving in replacement time is more important than it may appear since, in a continuous reduction process, a cessation of operations in one part of the works often necessitates stoppages elsewhere and may materially disturb the operating of a mine. Two objections have been raised against the use of rubber liners for tube mills. The first is that rock particles caught between a steel ball and a rubber lining would not be ground. This objection ignores the fact that the aim in a tube mill is crushing between balls and pebbles. The latter, by force of gravity, roll over one another, grinding the material between them. The balls effect this function more satisfactory when they rebound from a resilient liner instead of grinding against a metallic one, resulting in an abrasive waste of both balls and lining. The other objection is that successful tube mill experiments have been conducted where the pebble charge has consisted of smooth iron balls or rounded pebbles, and that the use of rough chunks of rock with sharp cutting edges, such as those commonly used in South African mills, would be precluded.

Experiments made in the Federated Malay States show that rubber can be successfully reinforced, e. g., with fine wire mesh such as is used in mosquito screening, and it is probable that a liner fortified in this manner would solve this problem if ordinary non-reinforced rubber did fail to meet this situation. Research with regard to this problem is desirable, as obviously mines, when they have a suitable supply of abrasive to hand, wish to utilize it rather than buy and import the latter from elsewhere.

Schaphorst's CHATS *with the* ENGINEER

By W. F. SCHAPHORST, M.E.

Why Use Water?

NO doubt every engineer in rubber plants remembers the Mackinac boiler explosion. That explosion has been the cause of considerable talk recently about boiler inspection and hydrostatic and hammer tests. These things have all been very interesting to me as I have had a little to do with such things, especially hydrostatic tests.

When I took a course on "Steam Boilers" in college I was taught by the professor that the reason why cold hydrostatic tests are made in preference to tests under steaming conditions at actual boiler pressure is because cold hydrostatic tests are safe whereas hot tests are not safe. When a boiler explodes under steam pressure things in general are usually pretty well messed up. Therefore, to more than duplicate actual conditions without the necessity of using hot water and steam, the pressure of cold water is brought up considerably higher than under normal operating conditions and we have what might be called the "equivalent" of a test under working pressures and temperatures.

If this is true (and it sounded plausible to me at the time) why not duplicate actual working pressures and temperatures so long as it can be done? I believe it can be done by using a fluid other than water—a fluid that will not form gas or vapor as readily as does water—a fluid that remains fluid under high temperatures.

A number of times I have asked this question: "Why don't boiler manufacturers keep a supply of oil or other fluid on hand with which boilers could be filled and which could be safely heated to operating temperatures?" The operating pressure could then be created by means of a pump and it would be a simple matter to keep the temperature up where it belongs without any danger whatsoever. Even if the seams should part there would be no "explosion" because there would be no gas. Why is it not done? I have asked this question a number of times, but have never received a satisfactory answer. It would be a long step toward making every boiler in rubber plants absolutely safe.

1,000 *Deg. F. Steam*

Now we are informed of a new line of valves which it is claimed will withstand a temperature of 1,000 deg. F. and 600 lb. steam pressure. Heretofore we have been told that 750 deg. F. is the limit.

We are becoming accustomed to rapid progress these days. Larger boilers of the water tube type are being installed right along; they operate at much higher pressures than a few years ago; modern stokers are becoming commonplace; and so is pulverized coal. In some industrial plants the steam pressures employed are higher than in central stations.

I am informed of a new boiler plant in Canada where pulverized fuel will be used. Any coal may be burned, even Nova Scotia coal with its low-fusing ash. The pulverizing plant will be located near the wharf nearly a quarter of a mile from the boilers. Things that were considered obstacles a few years ago are obstacles no longer.

STABILITE

The Age Resister—

STABILITE

Stabilizes and evens the working of your compound from first mixing to final cure.

STABILITE

Stabilizes the cure, making it possible for you to cure different sized tires in the same heat without overcure.

STABILITE

Stabilizes life and wear of your products wherever used by resisting age, heat and sunlight checking.

Write or Wire for samples and graphs.

Manufactured and Sold

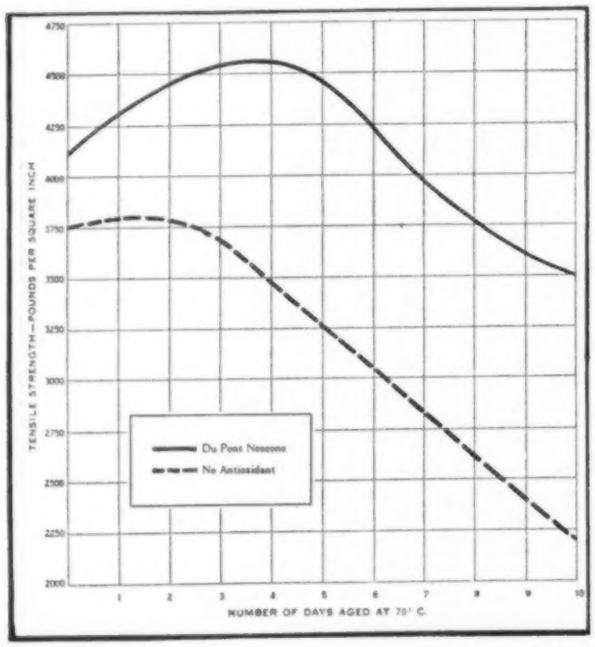
By

The C. P. Hall Company

Akron Ohio

Neozone—A New Antioxidant

NEOZONE, a new antioxidant for all types of rubber products, is now being offered by E. I. du Pont de Nemours & Co. of Wilmington, Dela. It is a solid material which comes in the form of thin gray flakes. According to the manufacturer, exceedingly small percentages of Neozone effect a quite remarkable improvement in the aging properties of rubber compounds. The melting point of Neozone is sufficiently high that it will not melt or run



together in the can or barrel and it may be handled and weighed the same as any dry filler. On the other hand, it is of such a nature that it will not dust as most dry compounding ingredients do. It melts on the mill, dispersing very readily in the rubber, and its excellent antioxidant properties are attributed in part to the thoroughness of its dispersion.

The manufacturers are prepared to furnish reports of tests conducted in their rubber laboratory showing the effect of Neozone in various types of rubber compounds. Oxygen bomb tests are used to show how the compounds will age under normal temperature conditions and air oven tests at 70°C. or at 90°C. are employed to duplicate the effect of aging at elevated temperatures. Although Neozone is classed as an antioxidant, it is equally effective in improving the resistance of rubber compounds to high temperatures regardless of whether oxygen is present. This property is especially important in bus and truck tubes which are simultaneously exposed to high temperatures and to air.

Neozone neither accelerates nor retards vulcanization but du Pont chemists state that it does increase the tensile strength of compounds accelerated with Thionex. Neozone also generally causes a slight increase in the modulus and that, together with the increase in the tensile strength, results in a decided increase in the resilient energy of the compound. It is well known that the resilient energy of a tread compound is a valuable index of its abrasion resistance and it is therefore not surprising that the addition of a small percentage of Neozone has a distinctly favorable influence on the abrasion resistance of tread compounds.

Neozone has been found to be effective in low grade compounds containing large percentages of reclaimed rubber as well as in pure rubber stocks, such as thread and in high grade pneumatic tire stocks. Protection against oxidation is even more essential in cheap compounds containing little or no crude rubber than it is in high grade compounds and Neozone is favored for use in low grade compounds because as little as 0.25% of it materially enhances the resistance to aging.

Not only is Neozone odorless and harmless to operators, but it also improves the resistance of rubber to heat deterioration as well as the resistance to oxidation. Only small percentages are required, making it possible to use it in the cheapest stocks.

New Short Cure Accelerator

The Roessler & Hasslacher Chemical Co., of New York City, have introduced a new accelerator known as "Thermlo-F" which they claim is developed to meet every requirement involved in the safe production of short cure molded inner tubes. It is stated that the accelerator allows calendering without scorching and will not react until the proper amount of flow takes place to completely fill the mold and make a perfect seam. After this point is reached Thermlo-F acts rapidly and effects maximum production from each molding unit.

Thermlo-F will not cause over-curing should the tube be held in the mold longer than the requisite curing time. It is not poisonous nor obnoxious, and fluxes freely with rubber on the mill, not running off at the end of the rolls. In order to illustrate its use the company submits a rubber mat which is made up according to the following formula:

Smoked Sheet	71.17	Cumar Resin	1.42
Blanc Fixe	17.80	Anti-oxidant	0.71
Zinc Oxide	4.27	Paraffin	0.35
Sulphur	1.78	Thermlo-F.	1.08
Color	1.42		

Stock of this mixing was cured in 5 minutes at 287 degrees F. and is not seriously overcured in 10 minutes at the same temperature. The physical properties obtained are:

Cure	% Stretch	% Set	600% Elong.	Tensile
5 minutes at 287° F.	880	15	850	3,548
10 minutes at 287° F.	890	15	900	3,458

Aging tests on this stock gave the following results:

Geer aging oven tests:

Days aged	0	4	6	8	10
Tensile	3,586	3,872	3,242	3,253	2,938

Bomb aging—60 degrees C., 300 pounds oxygen pressure:

Days aged	0	4
Tensile	3,586	3,706

The use of Thermlo-F is not limited to the use of inner tubes, but may be adapted to many classes of higher quality rubber goods, such as hot water bottles, ice bags, bathing caps, druggists' sundries, pure gum goods, etc.

Manual for Exporters of Rubber Sundries

A new and detailed foreign trade manual for American exporters of rubber sundries and specialties has been prepared by the Rubber Division of the Department of Commerce. According to E. G. Holt, Chief of the Division, distribution of the manual is already being made to companies on the appropriate mailing list of the Department, but copies will be furnished to other American firms which request them.

This manual is the fourth of a series. The earlier manuals covered tires and tubes, mechanical rubber goods and rubber footwear. It comprises about 100 mimeographed pages. The information the exporter of sundries and specialties needs is offered under country headings, about 100 territories being separately treated.

Recent X-Ray Studies *of* Rubber *and* Related Substances

Relationship Between the X-Ray Interference Phenomena and the Characteristic Properties of Rubber is Extremely Complicated—Structure of Rubber Still Lacks Completely Acceptable Explanation

By DR. E. A. HAUSER

This report by Dr. Hauser on recent X-ray researches in connection with rubber, guttapercha and balata will recall his paper on similar work which was read at the crude rubber symposium meeting of the Rubber Division, American Chemical Society, in Philadelphia in September, 1926. Micro-motion pictures of the dissection of the later globule were also shown on that occasion. The present report covers work which has been planned but not completed at that time. This paper is based on experiments by Dr. Hauser and his collaborators, Hunemorder and Rosbaud, and was read before the first general meeting of the German Rubber Society at Essen in June. Subsequently it was printed in the society's organ, "Kautschuk," from which it has been translated for THE RUBBER AGE by C. C. Davis.

SINCE J. R. Katz and K. Bing[1] expressed the opinion and then showed experimentally that stretched rubber exposed to X-rays must exhibit a fibre diagram, there has appeared a series of investigations directed toward ascertaining the cause of the appearance of such a diagram and toward correlating the properties of rubber with this phenomenon. Today there is no longer any doubt that the X-ray interference phenomena are related in some way to the characteristic properties of rubber, but this relation is far from being as simple as most authors assume. In fact the more the subject is investigated, the greater is the conviction that the relation is an extremely complicated one and that a completely acceptable explanation of the structure of rubber is still far removed.

There are two facts of particular importance in this connection: (1) the interference points do not change their position from the time of their appearance to the maximum elongation or racking, and (2) the interference points do not appear until the rubber is elongated to a definite point, *viz.*, 80 to 100 per cent. Moreover, in spite of well-known theories having been valuable in promoting further research, they have in almost every case failed to explain in a satisfactory manner the experimental facts. So far as is known, only the hypothesis of Hauser and Mark[2] of pre-existing swollen crystallites is adequate to explain the fixed position of the interference points.

The second established fact, *viz.*, the retarded appearance of the interference points, is not so readily explained, though the assumption is that at elongations below 80-100 per cent the crystallites are insufficiently contracted and formed in alignment to produce evidence of interference. Furthermore, as a result of the researches of others, it might be assumed that crystallization is induced by stretching and that the swelling point lies around 80 per cent elongation. This assumption conflicts, of course, with the established fact that rubber which has remained "frozen" for a long time shows distinct Debye-Scherrer rings even before stretching (see Fig. 1). There can thus be no doubt that unstretched rubber may under some conditions be partially "crystallized." If such rubber is cautiously stretched, interference points appear at a certain definite elongation, these points lying on the vanishing Debye-Scherrer rings. (See Fig. 2.)

On closer examination, it is further seen that all samples of rubber which are not transparent, but are turbid and silky in appearance (crepe being excluded) show both interference points and Debye-Scherrer rings. The appearance of interference points in particular is coincident

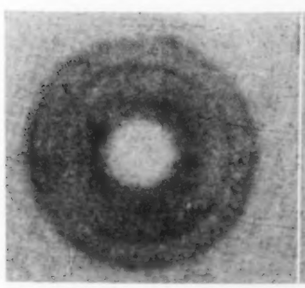


Fig. 1—"Frozen" Rubber before being stretched

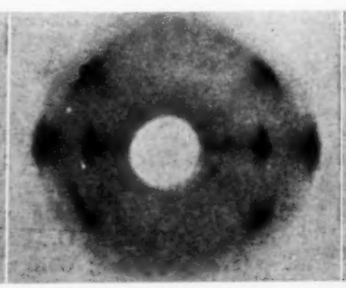


Fig. 2—"Frozen" Rubber stretched

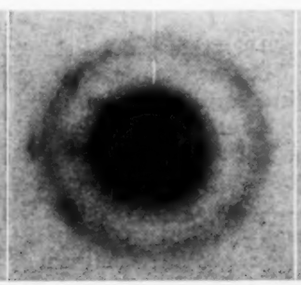


Fig. 3—Smoked Sheet stretched very slowly to 500%

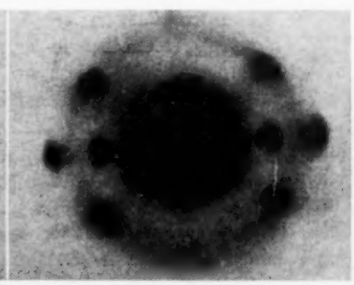


Fig 4—Smoked Sheet stretched rapidly to 500%

with the presence of turbidity. In connection with investigations on the influence of the rate and extent of stretching on the properties of rubber, it was found that with the minimum rate of stretching, rubber becomes most highly isotropic. Rubber stretched in such a way shows no interference points. Various indications point to the fact that the appearance of interference points depends to a large extent upon the kind of raw rubber. Further experiments on this subject are in progress and will be described in

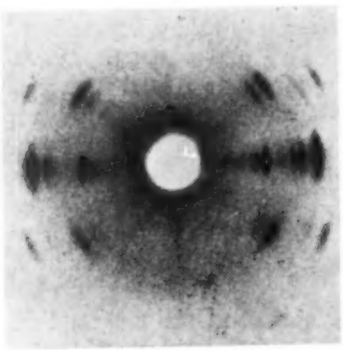


Fig. 5—"Racked" Rubber

detail later. The appearance of interference points in a given type of rubber depends therefore upon the rate at which the rubber is stretched (Figs. 3 and 4). In the light of the Hauser-Mark theory this means that when slowly stretched the state of influx inhibits for a time the increasing contraction. When, however, the limiting point where swelling occurs is reached, then contraction takes place rapidly.

As already described elsewhere, the Hauser-Mark hypothesis permits of a clear explanation of the hardening of racked rubber and of "frozen" rubber, as well as having proved itself a working hypothesis which is applicable in general to other fields of rubber research. In this connection it might be noted that the extensive parallel alignment and contraction of the particles of racked rubber during hardening can be seen in the X-ray diagram (Fig. 5). The extraordinary intensity of the interference points is evident.

Dealing with further experimentation, it is known that Feuchter[3] on the one hand and Pummerer[4] on the other have succeeded in separating rubber into two fractions by diffusion in ether. The insoluble portion has been termed gel-rubber and the soluble portion has been termed sol-rubber by Pummerer. Roentgenographic investigation now shows that gel-rubber, sol-rubber and their mixture (the integral rubber) show when stretched the interference points normally observed with ordinary rubber. In the case of sol-rubber this is, of course, true only of preparations which are kept in carbon dioxide and photographed in this gas.

While in the case of rubber a slight swelling and concentration are possible, the swelling medium in the case of balata and of gutta-percha is much harder. When not stretched, both give, as described elsewhere, Debye-Scherrer diagrams and therefore they correspond in condition to some extent to frozen rubber. This may explain the lower degree of elasticity of balata and of gutta-percha. As Miedel (working in the laboratory of Hauser) has proved, these two substances become elastic only when they are subjected in a purified state to a racking process at 35-40°C. Under these conditions, very striking point diagrams were obtained (Figs. 6 and 7). The intensity periods can be calculated from the Polanvi relation. As G. L. Clark[5] has found, the Debye-Scherrer rings of unstretched balata and gutta-percha exhibit certain differences with respect to their angles of diffraction. The point diagrams, however, show great similarities, as is evident from the illustrations, the position of the interference points being the same and the identity periods in the direction of the fibre axis being 9.4 A.U. The size of the elementary cell has naturally not been definitely ascertained, and the only fact which has been definitely established is that the number n of the molecules in the elementary cell is very small, varying from 2 to 8.

It is known that the limiting point of swelling where interference points appear in hot vulcanizates is abnormally high. There is little doubt that the cause of this is to be found in a hardening of the originally slightly polymerized phase and an accompanying increased difficulty of contraction, which may be influenced in various ways by different fillers. Researches on this subject are to be published, but reference may be made to the interesting observation that there is obtained, besides the normal amorphous ring of unstretched rubber and the Debye-Scherrer rings of fillers, a very narrow ring which according to the Ehrenfest formula[6] has a cell dimension of a=10.17 A.U. with ZnO mixtures and a=9.22 A.U. with ZrO_2 mixtures. The most surprising and not yet adequately explained fact is that this narrow ring is not reproducible after the sample has been stored for a long period. Only further data will allow a satisfactory discussion of these phenomena.

It is hoped that the new researches described in the present article will help to show that the relation between the appearance of Roentgen interference points in stretched rubber and the peculiar and striking properties of the latter is a very complicated one, as has been assumed previous to these new researches. Much work is still required to

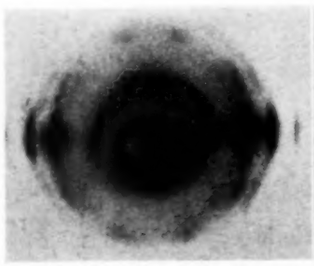


Fig. 6—Stretched Balata

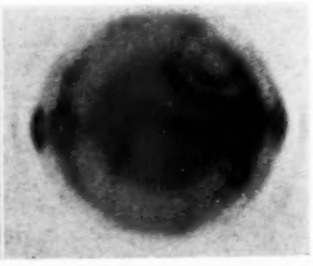


Fig. 7—Stretched Gutta-Percha

gain a thorough understanding of this relation. Nevertheless, the facts above justify the hope that valuable knowledge of rubber has been acquired and that it will lead far in solving the problem of the structure of elastic gels in general.

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Canadian Crude Rubber Imports Increase

A remarkable increase of crude rubber imports into Canada since July, 1926, is reported by the Dominion Bureau of Statistics. In July, 1926, crude rubber imports totaled 1,552 long tons, while in July, 1927, crude rubber imports rose to 2,107 long tons, and in June, 1927, to 2,085 long tons. During the year ending with July, 1926, imports of crude rubber into Canada totaled 20,316 long tons while in the following twelve months Canada received 25,035 long tons, an increase of over 4,000 long tons.

Prospects for Earnings Among Leading Rubber Companies

Here Is a Collection of Concise Reviews Made By New York Financial Writers— In Most Cases Rubber Manufacturers Appear Likely to Attain Much Better Earnings in 1927

WITHIN the last few weeks a number of short articles surveying the financial position of some of the leading rubber companies have been prepared and published by Dow, Jones & Co., financial publishers and operators of the Wall Street ticker system and the Boston News Bureau. These articles have dealt briefly with each company's past performance and with an estimate of its future earning capacity in the light of the half-yearly statements made on June 30, 1927, by all the rubber manufacturers. Kelly-Springfield, Lee Rubber & Tire, Goodyear of Canada, Fisk and Firestone have recently been reviewed. Comments by Dow, Jones & Co., relative to these companies are briefed herewith.

Kelly-Springfield Tire Company

It is thought that Kelly-Springfield should earn a minimum of $3.50 a share on its 363,840 shares of $25 par common stock this year unless some unlooked-for adverse developments are encountered in the next three months. This would compare with a net loss of $3,439,800 before preferred dividend requirements reported in 1926. The company's outlook for the remainder of the year is good. Should there be a continuation for any length of time of such excellent weather as was general during early September, Kelly's sales would be greatly increased.

Earnings in the second six months of 1927 will also depend, to some extent, upon whether or not tire companies resort to spring dating this year. This practice, which will probably be followed, means that tire companies will take orders in October for delivery in November, December, January, February and March. In this way more business is obtained in November and December than would ordinarily be the case, and which would increase earnings in the last half of the year. Kelly has paid no dividends on the first preferred stock since April 1, 1924, so that the accumulation on this issue will amount to 21% or $619,500. The last payment on the second preferred was made on February 15, 1924, so that the accumulation will total 30%, or $1,579,410 on November 15 next.

In view of the comparatively heavy accumulations on the preferred issues and in order to have a less unwieldy capital structure, it is believed that Kelly-Springfield directors will take steps to recapitalize the company within the next year. This action may take the form of an offer to preferred stockholders to exchange their holdings for common stock.

Lee Rubber and Tire Corporation

John J. Watson, president of the Lee Rubber & Tire Corp., of Conshohocken, Pa., believes that the outlook for Lee is very good. The company's sales are keeping up on the basis of quite a little better than $1,000,000 monthly, Mr. Watson said recently, and bank loans are the lowest in a year and a half, the company having between $800,000 and $900,000 cash on hand.

Lee Rubber & Tire has changed its fiscal year to end October 31, thus making the company's next report embrace a ten months' period, ended October 31. It is believed that Lee will show a net profit at that time of approximately $750,000, which would be equal to $2.50 a share on the outstanding 300,000 shares of no-par capital stock and would compare with a net loss of $1,670,068 reported in twelve months ended December 31, 1926.

No dividends have been paid on the company's capital stock since September 1, 1923, but previously payments of $2 annually had been made. If current earnings continue at current level or better, however, it is reasonable to expect directors will give some consideration to restoration of dividends in the year beginning November 1, 1927.

Goodyear Tire and Rubber Company

Barring adverse developments, the Goodyear Tire & Rubber Co., Akron, together with subsidiaries, should earn well over $10 a share on its 830,720 shares no-par common stock this year, with a possibility of final results reaching $15, according to estimates by Dow, Jones & Co., of New York City. This would compare with actual earnings of $3.78 a share on the 830,734 outstanding shares of no-par common stock in 1926, after allowing for 8% and 7% preferred and management stock dividend requirements.

In the first six months of 1927 Goodyear reported earnings of $4.91 a common share, as compared with $1.43 a share earned in that period last year. Results in the six months ended June 30, 1927, were after deducting $750,000 raw materials reserve and allowing for 7% on the outstanding 650,796 shares of preferred stock; while 1926 common share earnings were after allowing for dividend requirements on the 8% and 7% preferred and management stock.

The Goodyear Tire & Rubber Co. is the largest rubber and tire manufacturing company in the country, and its outlook is favorable. The company will have its plant at Wolverhampton, England, in operation toward the close of 1927, while the Sydney, Australia, plant will commence operation next month. In addition it has factories at Akron, Bowmanville and Toronto, Canada, and Los Angeles, Cal. Production of tires in its main Akron plant is now running at about 50,000 tires daily, or just under the record figure established in June; while the Los Angeles and Canadian factories are working practically at capacity.

Fisk Rubber Company

The actual results of operations for July and August and a preliminary estimate for September definitely indicate that the Fisk Rubber Co. will earn more in the current quarter than for the previous eight months ended

June 30. In other words, the balance for the 825,244 shares of no-par common stock for the current quarter will be in excess of the 88 cents returned after charges and dividends for the first eight months. Earnings for the eleven months may easily run up to $1.80 a share for the common.

It is said that Fisk is well covered on its rubber and cotton requirements. Even allowing for seasonal drop in production and sales in the closing months, the company seems almost certain to earn at least $2.25 for the 14 months' fiscal period, or substantially more than the $2.23 a share reported for the October 31 fiscal year.

Firestone Tire and Rubber Company

The average earnings of the Firestone Tire & Rubber Co., of Akron, for 1925 and 1926 amounted to $22.47 a share on the 352,844 shares of common stock. In 1926 the company's profits fell to $12.94 because of crude rubber inventory losses and lower tire prices. Unit sales have increased this year from 15% to 20% over 1926, and, while the margin of profit has not equalled 1925 when $32 a common share was earned, increased business will probably result in a net income approximating the record breaking earnings reported two years ago.

The company has no funded debt and only $25,710,000 of preferred stocks outstanding. Current assets as of October 31, 1926, were $46,062,937, against current liabilities of $6,422,855. A rate of $6 a share on the common stock is paid, but an extra payment of $1 was made last year and it is probable that the annual rate either will be raised or an extra of $2 will be declared by the directors this year. The Akron plant is producing close to 43,000 tires a day and it is hoped to increase this output as soon as the Ford Motor Co. starts into heavy production. Some large orders have been booked from Ford for original equipment.

On October 1 construction will begin on the new Firestone plant in Los Angeles, which has been incorporated as the Firestone Tire & Rubber Co., of California. This new company, which has an authorized capital of $20,000,000, has issued $10,000,000 5% sinking fund gold bonds to provide capital for construction and other necessary financing. The bond issue is guaranteed by the parent company, and issued through the Cleveland Trust Co., Otis & Co., and the National City Co. Russell A. Firestone, second son of Harvey Firestone, has been named vice-president and active head of the California plant. Harvey Firestone is president.

Goodyear Tire and Rubber of Canada, Ltd.

The plant of the Goodyear Tire & Rubber Co., of Canada, is running at capacity on a 24-hour schedule, with prospects of maintaining this rate for several months to come. In addition to the Canadian trade, exports are going forward to 87 countries. Hitherto the company has handled exports to Great Britain and Australia, but recently in both of these countries the parent company has started to build plants, following the approval of the Canadian plant.

The directors of Canadian Goodyear may authorize payment of a $4 rate on the 133,300 shares of no-par common stock which was outstanding September 1. Holders of common stock of record on July 15 were offered the right to subscribe for 1½ shares for each share then held at the nominal figure of $1 a share. The charge was made because the company's by-laws prohibit the issuance of bonus stock. The right to subscribe expired on August 31, and the company reports that all shareholders have subscribed.

The Rubber Industry in Russia

DURING the first half of 1927 Soviet Russia imported over 6,800 tons of rubber from Great Britain which is now practically her sole source of supply. If a similar rate of imports should be maintained in the last half of this year, Russia's rubber absorption would have reached or surpassed the pre-war year of 1913 when about 13,000 tons were imported.

In a recent official publication called "Exports, Imports and Concessions of the Soviet Union," the present Russian government has reviewed the state of the rubber trade. Up until this year the post-war imports of rubber have been far below those of the pre-war years. The reason for this, the publication just referred to says, is the decline in rubber manufacture in the Soviet Union as a result of the decreasing purchasing power of the population and owing to exports of rubber articles abroad being almost entirely discontinued.

Rubber is used in Russia principally for the manufacture of rubber galoshes. A marked revival in demand for this product began in 1922 in which year almost four million pairs were sold from the Russian rubber factories. Sales have been steadily increasing since that time. At the end of 1925 the demand had increased to such an extent that there was a serious shortage. Apart from galoshes the Soviet rubber industry manufactures tires and molded rubber goods of various sorts. Russia is said to have about 12,000 passenger automobiles and 8,000 motor trucks.

In pre-war days Russia imported crude rubber and gutta percha from various countries, but at the present time with the system of State monopoly of foreign trade, rubber is purchased directly in England without recourse to middlemen. Over 99 per cent of the imports are now said to come from England with negligible quantities coming from Germany and France.

The official publication of the Soviet government points out that "the Soviet industry feels the burden of its exclusive dependence on British raw material and the Rubber Trust, the institution uniting the entire rubber industry of the Soviet Union, has already raised the question of growing the cauotchouc tree on Russian territory, which has already been commenced in the Caucasus, and also regarding the production of synthetic rubber from spirit and oil."

Sweden's Rubber Trust Broken

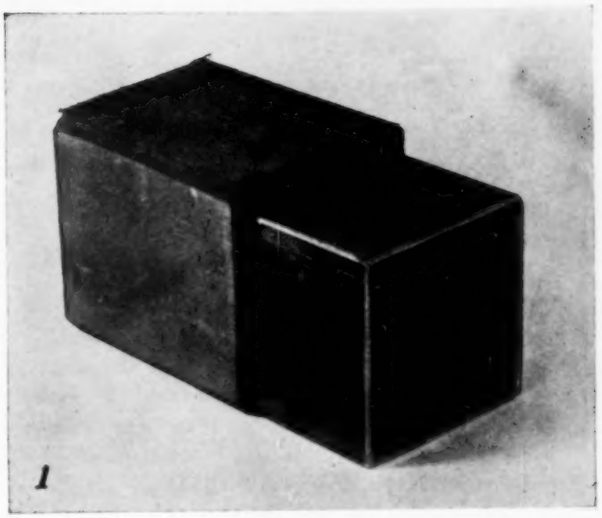
The virtual monopoly that has existed for many years in the Swedish rubber overshoe or "galosh" industry has finally been broken, according to a report of the American consul in Stockholm to the Department of Commerce. The Kooperativa Forbundet, or Cooperative Union of Sweden has by its purchase of Svenska Gummifabriks A/B at Gislaved, dissolved the trust of the largest rubber factories in Sweden.

The high prices that have prevailed for rubber overshoes in Sweden while the trust was operating will, it is thought, be reduced by the Cooperative Union. It is believed that the Union will reduce prices in the case of rubber shoes about 1 crown per pair. Representatives of other factories contemplate a conference in order to discuss measures to meet this competition.

Previous to 1907 the Swedish rubber shoe industry met with competition from the Russians who imported large quantities of their product, and especially rubber shoes, into Sweden. But in 1907 a customs duty was placed on rubber footwear coming from Russia, which resulted in a decline of Russian imports in this field and eventually left the Swedish manufacturers masters of the situation.

A New Rubber Paving Block

THEIR success in using rubber under compression as shock insulators at various points in the Mack truck has led the International Motor Company to try out the same idea in connection with rubber paving blocks. These pictures trace the process by which a block of rubber is enclosed in a steel band of somewhat smaller dimensions. Small areas of these blocks have been laid at the company's Long Island City plant and show almost no wear after two years' traffic has passed over them. The blocks are laid on a concrete base with a binder of grout between them. Experiments on a more extensive scale are planned.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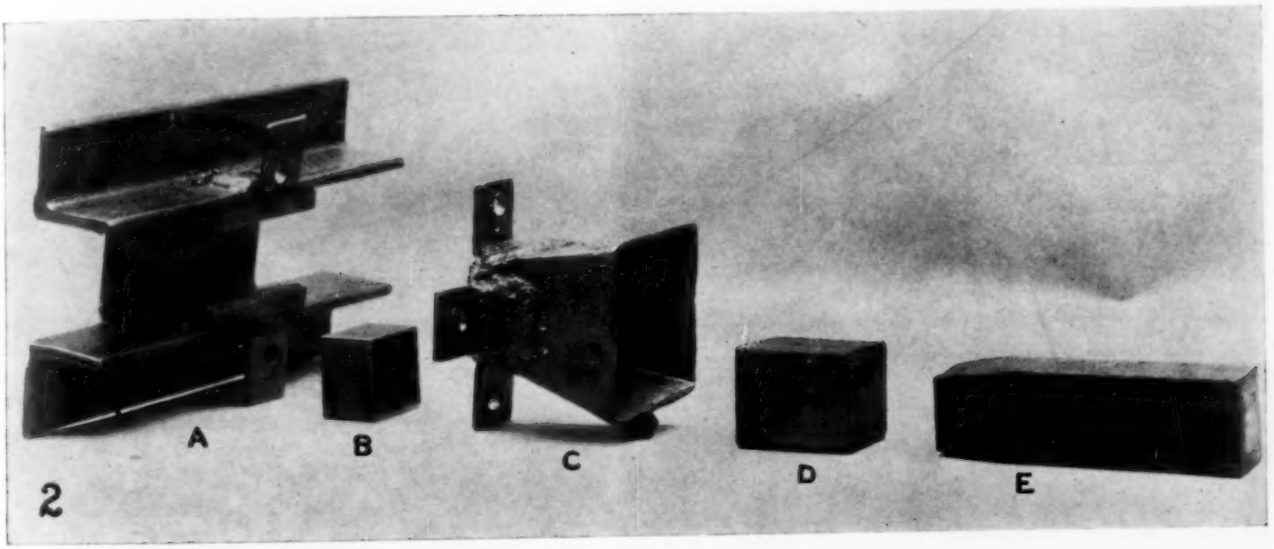

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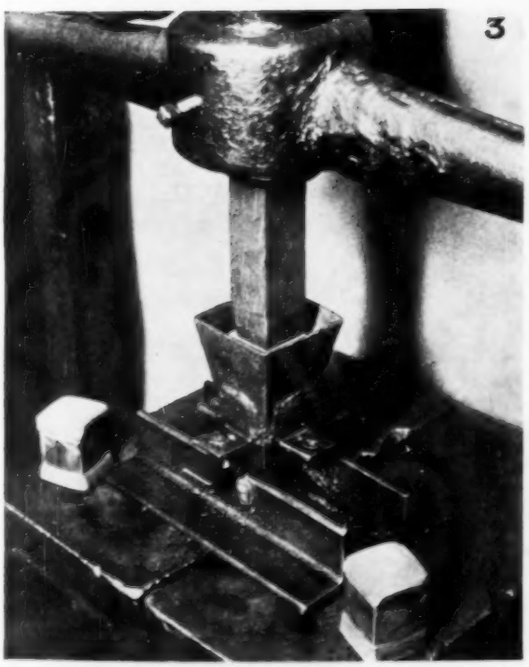
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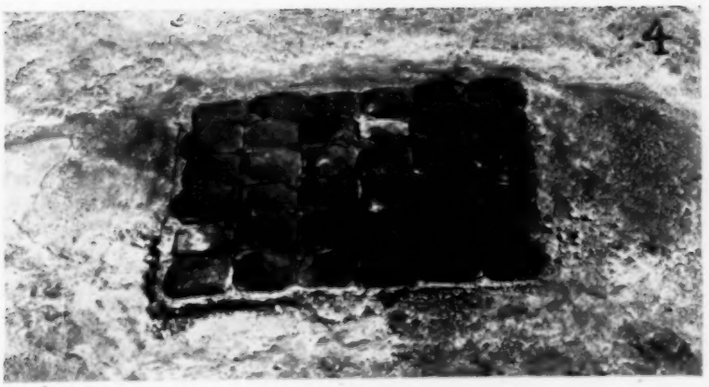
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What the Pictures Show

(1) The block of rubber and the steel band into which it is to be inserted, showing comparative size.

(2) Parts used in assembling the block. "A" is a holding fixture for the steel band, "B" is the band, "C" is a special funnel, "D" is the rubber, and "E" is a wooden ram.

(3) One of the blocks of rubber being forced into its band by a power press. Two finished blocks are shown.

(4) A small test area of the finished blocks.

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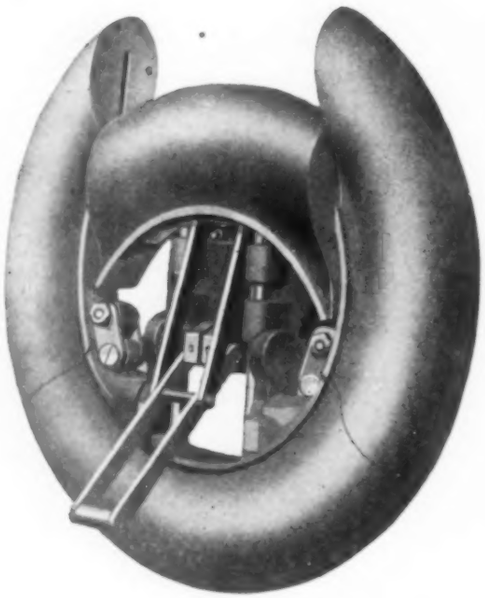

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EDITORIAL COMMENT

Too Much Oil

OIL, says Upton Sinclair, is a scandal. Oil, says Hubert Work, is, at the present moment, a disaster. While it must be admitted that Mr. Sinclair is an expert in locating and exposing scandalous conditions, the Secretary of the Interior has his own reputation for being completely informed about the natural resources of the United States and the rubber industry could read his observations on the present oil situation with profit for oil is a member of the great triumvirate which includes the rubber and automotive industries.

America's oil industry, Mr. Work declares, is a sick industry and the cause is overproduction. New companies have been constantly entering the business; new wells have been drilled by the thousands when production is already more than sufficient. Last year more than 300,000 wells in the United States produced over three-fourths of a million barrels; this year the oil output from these wells and the new gushers which have been brought in will exceed 900,000,000 barrels. The overproduction is now estimated to be running from 500,000 to 1,000,000 barrels per day.

The concern of the Secretary of the Interior is partly for the established companies and the thousands of investors who have put their money into oil stocks and bonds, but he is more concerned about the great depletion of America's oil resources. Oil taken from the ground can do us no good several years from now. Storage above ground is wasteful and expensive. The surplus should be left in the ground, Mr. Work contends, awaiting the time when it is actually needed.

Oversupply encourages cheapness and leads to wastefulness. The Secretary sees the evidence of this waste all along the line—in production, distribution and use. When almost one-half of the country's oil production is being used to displace the legitimate and equally effective use of coal, he points out, we are letting oversupply and the resulting cheapness prematurely and unjustly drain a resource that such industries as the automotive industry are counting on to last indefinitely. There is no assurance that the abundance of the oil supply will continue for more than a few years; the greater the present daily overproduction and waste, the more likely that the future of the automobile and airplane will be cramped by high priced motor fuel.

If the more than 22,000,000 automobile owners in the United States feel that the overproduction has not yet shown up in the selling price of gasoline, Mr. Work would have them remember that in 1920, when a shortage of crude oil was threatened, the price of gasoline in New York City reached 31 cents per gallon. At the present gasoline prices are said to be only two cents per gallon above 1907 and 1913, excluding the gasoline taxes that almost every State has imposed.

Uncertainty and the Rubber Industry

IT having been repeatedly charged in London that the recent dullness and weakness of the crude rubber market is attributable to the New York Rubber Exchange and the operation of other American "interests," F. R. Henderson, president of the Exchange, has made a spirited retort which is published elsewhere in this issue. Briefly summarized, Mr. Henderson tells the British that the weakness of the rubber market is due less to manipulations or "interests" on this side than it is to the uncertainty that surrounds the administration of the rubber restriction legislation.

It must be admitted that there is much logic in what the president of the Exchange says. Any judgment of how rubber prices will move after November must assume certain changes in the regulation or application of restriction. It is conceded in England that changes will be made, but there are a hundred opinions as to how the legislation will be changed. So long as such a state of uncertainty exists, slowness in trading need not be surprising. The same hesitancy may be expected to reappear every time the restriction regulations are about to be revised. If a permanent set of regulations could be announced one great fault of the scheme would be removed, but that appears to be no more practical after the "temporary" legislation has had a five-year trial than it was when it was first enacted.

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NEWS of the INDUSTRY

Financial—Business
Building Operations
Personals
New Products

L. D. BROWN, VICE-PRES. OF GOODRICH, IS DEAD

Associates of Popular Official Shocked By News of His Sudden Death on Train—Had Been With Company Ten Years After Long Banking Experience.

Lorenzo D. Brown, vice-president of the B. F. Goodrich Co. of Akron, died suddenly in the early morning of September 19, on a train which was carrying him to Rochester, N. Y., where he meant to visit a brother and continue thereafter on a business trip to New York City. As the train neared Rochester Mr. Brown was found dead in his berth. Heart failure was given as the cause of his death. He appeared to be in good health when last seen by his fellow-officials at Goodrich on Saturday. He was 52 years old.

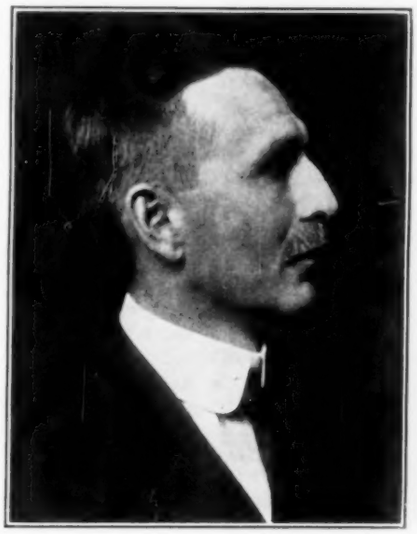
Mr. Brown joined the Goodrich organization ten years ago last spring when he was appointed treasurer. Several years ago the duties of vice-president were added to those of treasurer and Mr. Brown continued to fill both positions until recently when he was relieved of the treasurership in order that he could give all his time to the vice-presidency in charge of finances. He was well-known in the rubber industry and everywhere liked.

The early boyhood of Mr. Brown was spent in Hornell, N. Y., where he was born in 1874. His family moved to Akron when he was 11 years old and he has lived in that city since that time. His business career began as a messenger boy in the Second National Bank of Akron and he continued in the banking field for 26 years, or until 1917 when he joined Goodrich. In the banking field Mr. Brown had risen to the post of cashier and is credited with dominating the merger of the Second National Bank and the First National Bank of Akron. He was a vice-president of the consolidated bank at the time of his death.

Mr. Brown was a 32nd degree Mason and Shriner and belonged to numerous clubs in Akron and New York. He is survived by two sons and a daughter. He had been prominently mentioned as a possible successor to B. G. Work, Goodrich president, who died on August 30.

Murray Official Returns

C. Edward Murray, Jr., president of the Murray Rubber Co., Trenton, N. J., has returned from an extended business trip through the west and south.



L. D. Brown

Appointed to Branch

W. T. Metzger, identified with the Sea-Gate Tire & Rubber Co., of Cleveland, has been appointed to the Pacific coast branch of the company in Los Angeles. He will act as office manager and auditor.

General Tire Head Returns

William O'Neil, president of the General Tire & Rubber Co., Akron, returned recently from a six weeks' vacation and business trip in Europe. From his observations there he predicts an increase in the price of rubber early in 1928.

India Tire Conference

Branch managers of the India Tire & Rubber Co., of Akron, began a three-day conference at the factory on September 19 to discuss sales plans and policies, according to an announcement by C. C. Prather, general sales manager.

Gates Ferguson Promoted

Gates Ferguson, recently appointed manager of national advertising for the B. F. Goodrich Co., Akron, has been appointed to the position of advertising director of all Goodrich advertising. With this appointment, Goodrich local and national advertising departments have been consolidated.

MERGER OF BIRMINGHAM AND FARREL COMPLETED

Organization of the Farrel-Birmingham Company, Inc., is Announced After Stockholders Ratify Directors' Proposal—New Officers Named.

The Farrel Foundry & Machine Company of Ansonia, Conn., and the Birmingham Iron Foundry of Derby, Conn., prominent suppliers of heavy machinery to the rubber industry, are to be merged into one concern which will be known as the Farrel Birmingham Company, Inc. The directors of the two companies voted several weeks ago in favor of such a move and the proposal was ratified by Birmingham stockholders on September 20 and by Farrel stockholders on the following day. At a joint meeting on September 21 the Farrel Birmingham Company, Inc., was organized with the following officers:

President, Charles F. Bliss; vice-presidents, F. D. Wanning, Walter Perry, and Franklin Farrel, Jr.; secretary, George C. Bryant; assistant secretaries, Carl Hitchcock and W. B. Marvin; treasurer, Alton Farrel; assistant treasurers, F. M. Drew, Jr., and Donald G. Warner. These officers are drawn from both the old Farrel and Birmingham organizations with a majority coming from the former company.

The consolidation of the two machinery companies is the largest that has recently been made in Connecticut and is also the largest recent merger in which the rubber industry has an interest. Although both companies are known throughout the rubber industry, rubber mill machinery was only one of the many lines manufactured by each. Heavy machinery of several types including that for sugar, paper, celluloid, asbestos and rolling mills, has been made for many years. Both of the concerns are very old. The capitalization of the new concern will be $5,700,000. It has not been announced whether there will be any new financing.

It is not contemplated that any sweeping changes in production will be made, the principal object of the merger being to effect economies in covering fields of distribution which were largely identical.

Returns From the Orient

Sidney L. Plant, president of the Plant Rubber & Asbestos Works, San Francisco, Cal., recently returned to his office after spending the last several months in the Orient and Australasia.

REPLIES TO BRITISH CRITICS OF EXCHANGE

F. R. Henderson Answers English Statement That Rubber Exchange Depresses Market—Uncertainty of Restriction Cause of Bearish Activity.

F. R. Henderson, president of the Rubber Exchange of New York, replied on September 10th to recent criticism in London that the New York Rubber Exchange was depressing the rubber market. He said that whatever depression existed was due largely to doubt and uncertainty as to the future of the Stevenson restriction act and to continued conflicting rumors as to whether it would be abandoned or made more drastic. The rubber market, he said, would drag of its own weight until the English government had made known in definite and final terms its position in regard to restriction.

Mr. Henderson's Statement

"Much is being written in London publications regarding the 'bearish activities' on the New York Rubber Exchange," Mr. Henderson said. "Perhaps a glance at the true situation in the rubber market is a better answer to the prevailing situation than hit or miss statements regarding the activities of 'interests.'

"Rumors are constantly afloat reporting, first, that the British government will abandon restriction and leave the question to the growers themselves. Next comes a report that the British government is reviewing the situation with the intention of tightening the law, which will materially reduce shipments in the next period. How can any market face the possible consequences of either situation with equanimity? The result has been a quiet market with limited trading and an easier tendency is natural with the present statistical position.

"Remove restriction and we have a potential supply of 700,000 tons of rubber for next year. Even with a possible consumption of 650,000 tons, there would be an increase in world stocks that would hardly justify the present level of prices. Keep restriction on or only abandon it with long notice, and the world must eat into the existing stock, and a considerably stronger market is almost inevitable.

"We view general conditions in the rubber manufacturing business as extremely healthy, and we therefore can only base our opinion of future prices after a decision is announced from London. In the meantime, the market will drag of its own weight, with occasional pronounced movements influenced by the amount of rubber offered or bid."

Buys Bergougnan Rubber

The plant of the Bergougnan Rubber Co., Trenton, N. J., was recently purchased by the Pennsylvania Railroad Co. The price is said to have been about $200,000. Charles E. Stokes, president of the Home Rubber Co., Trenton, was the receiver of the concern. The Bergougnan factory was closed down a few years ago after enjoying a prosperous business in Trenton for a long time. The factory consists of three modern manufacturing buildings and nine acres of land.

DOVAN FILES NEW SUIT ON WEISS PATENT USE

A new suit on the Weiss patent covering the use of di-substituted guanidines for acceleration of the vulcanization of rubber, has been filed by the Dovna Chemical Co. against the Firestone Tire & Rubber Co., of Akron, and the Mercer Rubber Co., of Trenton, N. J. This patent has already been twice litigated. It was declared invalid by one court and valid by another. The final question of its validity is before the Supreme Court of the United States, where it was transferred by a writ of certiorari from the local courts.

The present suits, it is believed, are based upon the alleged infringing use of other di-substituted guanidines, which include diorthotolylguanidine and phenyltolylguanidine. Recently the scope of the Weiss patent was modified by a disclaimer in order to limit the broad claims to di-substituted guanidines.

INDIA WILL NOT FLOAT BONDS FOR FINANCING

In a letter recently addressed to stockholders, the India Tire & Rubber Co., of Akron, states that the special meeting called June 22 for the purpose of considering the issuance and sale of $1,500,000 of 10-year sinking fund 6% gold debenture bonds was finally adjourned early in September without future call after having been adjourned from time to time in the interim. All negotiations relative to the bond issue have been terminated and the company's proposal for the sale of the bonds has been withdrawn.

The company's profits to July 31 amounted to $2.61 per share of common stock, after providing for preferred dividends. This represents annual earnings at the rate of 21% upon the common stock alone. All dividend requirements for the year were earned in the first six months, the letter to stockholders says.

Old Wayne Tire Plant Sold

The three-story brick building in Orrville, O., which was at one time occupied by the Orrville Rubber Co., and later by the Wayne Tire & Rubber Co., both no longer in existence, was recently sold at a sheriff's sale for $9,500. The sale was made to satisfy the bondholders of the Wayne Tire & Rubber Co., who a few years ago refinanced the company with the hope that it would develop into a growing industry.

RUBBER CONSUMPTION INCREASES IN AUGUST

Crude Rubber Consumption for August Totals 33,460 Tons, While Imports for the Same Period Totals 33,068—Consumption Gains 4,000 Tons.

Contrary to what occurred in July, when crude rubber consumption fell to the unexpectedly low figure of 29,219 tons, August consumption jumped to 33,460 tons (based on 100%) or an increase of 4,241 tons over the previous month, according to statistics of the Rubber Association of America. Coincident with this increase in August consumption of crude rubber, stocks on hand at the end of August show a decrease of over 2,000 tons from July, when tonnage of stocks on hand totaled 98,469 as compared with 96,148 at the end of August, based on 100%. Stocks afloat for U. S. ports at the end of August totaled 40,937 tons, compared with 40,587 tons at the end of July. Total stocks on hand and afloat at the end of August amounted to 137,085 tons, equal to a little more than four months' supply at the August rate of consumption.

Eight Months' Consumption

In the first eight months of 1927 consumption of crude rubber in the United States totaled 264,738 tons, an increase of 15,944 tons, or 6.4%, over the corresponding 1926 period.

The report of the Rubber Association concerning imports of crude rubber into the United States during August reveals a considerable decline in tonnage from July. August imports totaled 33,068 long tons, which compares with 38,667 long tons received in July and 25,969 long tons imported in August, 1926. In the first eight months of the current year, ended August 31, crude rubber imports totaled 298,585 long tons which compares with 271,693 long tons imported in the corresponding period of 1926, or a gain of 9.89%. Thus it will be seen that in the first eight months of 1927, crude rubber imports were 33,847 tons in excess of crude rubber consumed in the same period.

Preliminary estimates by the Department of Commerce relative to imports of crude rubber during August, based on 96% of total United States imports, are 29,691 long tons at a total declared value of $22,838,112. The Rubber Association's estimates for the same month are more optimistic. Comparative figures relative to rubber imports, compiled by the Association, follows:

	Aug.-1926	Aug.-1927
Plantations	24,431	31,195
Paras	640	986
Africans	175	29
Centrals	483	504
Guayule	240	345
Manicoba and Matto Grosso	.....	9
Total	25,969	33,068

DEPARTMENT SURVEY OF DEALERS' STOCKS SOON

The semi-annual survey of tire dealers' stocks, taken on the first of April and October of each year by the rubber division of the Department of Commerce, is underway with the mailing of questionnaires to all tire dealers. In anticipation of this survey, tire companies have requested their dealers to cooperate with the Department in order that the survey may help to stabilize tire production, which, as one company points out, "means more satisfactory operating conditions and consequently greater profits."

The survey in the fall of last year revealed that the average tire dealer throughout the United States had an abnormally low number of tires on hand on the first of October, with an average number of casings reported at 48. This compared with an average stock of 56.6 in the fall of 1925. In the case of inner tubes, the government survey showed that the average dealer held 90.7 tubes on October 1, 1926, as compared with 99.1 in the same month of 1925. Assuming that there were 100,000 tire dealers in the country on October 1 of last year, it was found that they held 860,000 casings and 840,000 inner tubes less than they held a year before. It is this data on the quantity on tires available for consumption that the survey is expected to develop again.

Issues Cotton Chart

A. Norden & Co., cotton and rubber brokers of New York City, have recently issued a chart measuring 21½"x17" showing the statistical developments in cotton through a quarter century. The spot price of middling uplands in New York from 1902 until September of the current year is graphically shown. The spot price of cotton in 1919-20, according to the chart, rose from 29 cents in this period to 44 cents, the highest spot price for middling uplands in the last quarter century. The chart also presents statistics of the Census Bureau reports of cotton ginned in the last quarter century, together with yield per acre, world's consumption of American cotton and consumption of all kinds of cotton. The chart also shows the acreage by states, production and condition reports by states.

HOLD EXPOSITION OF CHEMICAL INDUSTRIES

The Eleventh Exposition of Chemical Industries will open in the Grand Central Palace, New York City, on September 26 and extend through to October 1, with 350 exhibits, many of them by foreign chemical companies whose presence in this exhibition represents a deviation from the program of former expositions.

The number of American chemical firms who are taking part in the present exposition is considerably greater than in past years, and indicates an increasing interest in the exposition that has grown to a proportion three times greater than in 1921. Many of the firms exhibiting this year are new in the exposition field and their products not widely known.

The fifth chemical industries banquet will be held on Wednesday evening, September 28. One of the interesting features of the exposition will be a students' course, held in conjunction with the exhibits. The course will be on the Fundamentals of Chemical Engineering and Industrial Chemical Practice.

R. A. A. Traffic Men Meet

The traffic committee of the Rubber Association of America held a three-day meeting in Cumberland, Md., September 12-14. Representatives of the principal steamship and railroad lines in the eastern territory were present. Entertainment was provided by the Kelly-Springfield Tire Co. with L. H. Ley, Kelly's traffic manager, acting for the company. Two of the railroads also gave complimentary dinners to the committee during the meeting. The fall meeting in Cumberland has become a regular feature of the traffic committee's program due to the kind invitations of Kelly-Springfield.

F. P. CHOATE RESIGNS FROM MURRAY RUBBER

Frank P. Choate, vice-president and sales manager of the Murray Rubber Co., Trenton, N. J., has resigned and returned to the west. He says he has no plans for the future. He had been connected with the Murray company but a few months. Fifteen years ago Mr. Choate organized the tire and accessory department for Sears, Roebuck & Co., of Chicago, and was sales manager for the western concern until last spring. Mr. Choate is widely known in the automobile field and was for some time in charge of sales for the Kissell Motors Co., with headquarters in Chicago.

Mr. Choate's place will be filled at present by C. Edward Murray, Jr., president of the Murray Rubber Co.

Tire Dealers' Convention

The convention of the National Tire Dealers' Association will be held in Louisville, Ky., from November 14 to 17. The program for the convention has not yet been issued.

Hauser Visits in U. S.

Dr. E. A. Hauser, well-known German rubber chemist, who has recently completed a number of researches with rubber latex in Malaya, recently visited briefly in the United States on his return trip to Europe and continued his journey on the "Aquitania." While in this country he was able to renew his acquaintance with many American rubber chemists, although time did not permit his attending the Detroit meetings of the Rubber Division of the American Chemical Society.

Florida Tire Factory

The Gould Tire & Rubber Co., of Hialeah, Fla., recently capitalized at $500,000, is reported to be remodeling an old factory building in Hialeah with a view to installing machinery by November 1 and starting operations by the first of January.

Rubber Association Traffic Committee and Carriers' Representatives at Cumberland Meeting

REPORT FORD OBTAINS BRAZIL RUBBER TRACT

Para Report Says Ford Buys 1,200,000 Acres—Plans Rubber Plantation—English Papers Comment on News—Local Markets Not Affected.

New York newspapers recently published a fantastic report from Para, Brazil, that Henry Ford had bought 1,200,000 acres of land in Para from an American who holds that concession, for $42,000,000 and intends to use the land for a rubber plantation. If he is successful in closing contracts with Para, the report states, he plans to take 2,800,000 additional acres.

This information follows closely the publication of a story in the "Brazilian-American" of Rio de Janeiro that Ford was about to invest 350,000 contos ($42,000,000) in rubber cultivation in Para. The report says that Mr. Ford will install 50,000 laborers in Tapajoz, and build a railroad across Para. The latter, it was said, would probably be started in two months. The railroad would extend from Santarem, Para, to Cuyaba, Matto Grosso, a distance of 1,000 miles.

Mr. Ford has taken an unusual interest in the possibilities of growing rubber in Brazil and the news that he was to undertake experimental plantations in that country, on a more reasonable scale than is indicated in the reports from Para, would not be entirely surprising. About one year ago he had Dr. Carl LaRue, a member of the Department of Commerce Brazilian investigating party in 1923, visit the Amazon and prepare special reports. No announcement as to what Dr. LaRue reported or how the reports were viewed by Mr. Ford has ever been made.

Effect of Report in London

The report of Mr. Ford's Brazilian rubber venture was received in London by rubber growers and brokers without excitement, and without any effect on the markets, although several newspapers featured the story prominently, among them the London *Evening News*. Ian Wilson, director of a firm of important rubber brokers, is reported as saying:

"It is unlikely that the news from New York will have any effect on rubber prices here. In the first place it will be several years before any rubber can be produced for Ford, and in the second, great labor difficulties and the high cost of working in Brazil probably make the plan uneconomic. I don't think it may be regarded any more seriously than previous schemes advanced in the United States, which have come to nothing."

The London *Evening Standard* makes the following comment, after first saying that Ford's move is an indication of growing bitterness of American consumers against the Stevenson Act: "For this reason if for no other many authorities here believe that the British industry would benefit enormously by the removal of the restriction. So far it has done little good, and, as Mr. Ford's action shows, has built a barrier of bitterness between America, the great rubber consumer, and Britain, the greatest rubber producer."

New Building for Schrader

A. Schrader's Sons, Inc., manufacturers of tire valves, are installing machinery in a new five-story building recently erected in Akron. This added to the 20,000 square feet of the old building totals 110,000 square feet of floor space, which, it is reported, will eventually be operated in full with from 200 to 300 men.

Home Rubber Head Returns

Charles E. Stokes, president of the Home Rubber Co., Trenton, N. J., and Mrs. Stokes are home again following an extended tour through Europe.

TRENTON RUBBER FIRMS ON FULL TIME BASIS

The majority of the Trenton, N. J. rubber manufacturers are enjoying a good season and are looking for a successful winter season. Whitehead Brothers Rubber Co. has enough orders on hand to keep the factory running on a full schedule for some time. Factories making hard rubber goods are not encouraged over the outlook. Orders for tires and tubes have dropped off a little. Manufacturers say that they can see no near increase in prices of tires and tubes.

The Puritan Rubber Manufacturing Co., Trenton, N. J., reports that the month of August was the largest in its history as to production and sales. The concern is now operating night and day. The company recently installed new machinery for the manufacture of floor tiling of all kinds, mats and rubber cements for rubber, tile, leather and linoleum.

Sidelights on the DETROIT MEETING of CHEMISTS

After stepping down from the office of secretary-treasurer by his own refusal to accept renomination, Arnold H. Smith said that he regretted the necessity of such a move, but that other duties, chiefly in connection with the Rubber Service Laboratories Co., made it unavoidable. He had been secretary-treasurer from the time the Division was formed.

* * *

Before the business meeting it was rumored that R. P. Dinsmore would be re-elected chairman, although he was not seeking another nomination. The feeling that he would be continued in the same post was due to the fact that the local sections of the Division which he has sponsored will have to be organized and gotten underway during the next year. Considerable surprise was accordingly felt when the nominating committee presented the name of Dr. H. L. Fisher for chairman. Dr. Fisher has served as vice-chairman during the past year and has also had a part in planning the new program of the Division.

* * *

Many well-known chemists who were always seen at Rubber Division meetings in the past were not present at Detroit. A few of those who were at Philadelphia last year but were missing this year are Messrs. Wiegand, Murrill, Bierer, Scott, Smail and Doty. On the other hand, the Detroit meetings were attended by dozens who had not been seen in other years.

* * *

A feature of the Detroit attendance which was noticed by a number of members was the youth of the chemists of today as compared with those who attended the meetings in the early days of the Division. A few of the "old guards" were on hand, but on the average the age of the chemists attending the meetings was visibly far lower than at any time in the history of the industry.

* * *

Dr. E. B. Spear, as chairman of the nominating committee, praised the work of A. H. Smith, retiring secretary, before he presented the name of the new nominee, Prof. H. A. Simmons. The opinion was expressed by Dr. Spear that the success of the Division has been due in large measure to the loyalty and hard work of Mr. Smith who had acted as secretary-treasurer since the Division was first formed. That all the members present approved Dr. Spear's statement was apparent from the applause that followed his remarks.

* * *

On Thursday afternoon, which was alloted to excursions to factories, a number of Rubber Division members went to the Ford airfield and enjoyed the thrills of flying at $5.00 a ride. The large 3-engined plane accommodating 14 passengers was used.

* * *

Trips were made by several of the members to the Morgan & Wright tire factory, several of the Ford factories and a number of other automobile plants.

* * *

Specially marked rubber erasers, distributed by THE RUBBER AGE to each member and guest at the banquet, were received with much favorable comment. It was noticed that each eraser was immediately pocketed for fear that it might find its way into strange hands.

JULY TIRE AND TUBE PRODUCTION DECLINES

Rubber Association Report for Month of July Shows Less Production and Inventory for All Tires and Inner Tubes—Tube Shipments Increase.

A general decline in production and inventories of automobile inner tubes and casings occurred in July, according to statistics released by the Rubber Association on September 15. Only in the field of inner tube shipments is any increase noted. Casing inventories at the end of July, based on 100 per cent, totaled 11,326,000, which compares with 12,462,000 at the end of June. Production of tires throughout July amounted to 5,087,000 (based on 100 per cent) as compared to 6,202,000 in June, while July shipments were 5,973,000 in comparison to 6,253,000 in the previous month.

Inventories of inner tubes at the end of July stood at 16,004,000, based on 100 per cent, while production in the same period was 5,284,000 and shipments 7,070,000. This compares with June inventories of 17,858,000; production, 6,306,000, and shipments of 6,832,000. It will be noted that an increase occurred in inner tube shipments for July.

Similar declines in inventory, production and shipments occurred in balloon casings and inner tubes. July inventory of balloon casings, on a 100 per cent basis, totals 5,954,000; production, 2,926,000, and shipments, 2,908,000, while balloon inner tube inventories at the end of July totaled 8,186,000; production, 2,575,000 and shipments, 2,882,000.

In only one instance during July was production of inner tubes increased over June. This was in the case of high pressure inner tubes, output of which totaled 2,709,000 during July as compared with 2,580,000 during June. Shipments also increased, amounting to 4,188,000 in July, based on 100 per cent as compared to 3,728,000 in June.

A comparative table of June and July figures of the Rubber Association, based on 100 per cent, follows:

	July, 1927	June, 1927
Pneumatic Casings:		
Inventory	11,326,533	12,462,564
Production	5,087,498	6,202,260
Shipments	5,973,590	6,253,857
Inner Tubes:		
Inventory	16,004,885	17,858,529
Production	5,284,982	6,306,440
Shipments	7,070,061	6,832,328

Spends Vacation in West

Clarence D. Wilson, secretary of the Luzerne Rubber Co., Trenton, N. J., spent his vacation traveling through the western states.

Ajax Official in Michigan

William W. McMahan, vice-president and general manager of the Ajax Rubber Co., Trenton, N. J., recently spent some time on a business trip to Michigan.

Robert B. Baird

Robert B. Baird, chairman of the board of directors of the Baird Rubber and Trading Co., who was well-known in the crude rubber trade of New York, died on September 9 at his home in Brooklyn. Mr. Baird was 69 years old. Some years ago he was injured in a trolley accident, the effects of which had left him in poor health.

Bertram G. Work

Funeral services for Bertram G. Work, late president of the B. F. Goodrich Co., Akron, who died in St. Moritz, Switzerland, August 30, were held on September 14 in his home, Oak Knoll, Oyster Bay, L. I. Among the pallbearers were C. B. Raymond, H. E. Raymond, D. M. Goodrich, C. C. Goodrich and W. O. Rutherford. Following services at Oyster Bay, the body was taken to Akron where services were held on September 15 in the Church of Our Saviour. Burial was in the family mausoleum in Glendale Cemetery, Akron.

Mr. Work's will, naming his son, Bertram G. Work, Jr., as sole heir, was filed for probate at the Surrogate's office in Mineola, L. I., on September 20. Under the terms of the will his son is to receive during his lifetime the income of a trust fund of $500,000. The entire residuary estate, as well as the personal effects of the testator, is also left to the son.

Organize Colonial Rubber

The Colonial Rubber Co., Yardville, N. Y., was recently organized in Trenton, N. J., to take over the bankrupt plant of the Enterprise Rubber Co. The company has installed new machinery and is already enjoying good business in the manufacture of rubber specialties. Myer Rednor is president.

POLSON RUBBER TURNS OVER SALES TO AGENT

The Polson Rubber Co., of Garrettsville, O., recently announced the closing of its experimental sales room maintained in Cleveland and the turning over of all local sales and service of Polson products to Cleveland Rubber, Inc. The Polson Rubber Co. has for eight years been manufacturing and marketing the Polson super-tube. During this time it has built a national business and established distributors throughout the United States.

The Cleveland office was opened for two reasons, first, to procure close contact with the buying public and to work out through its own experience the most successful sales and service methods, and second, to build a worthwhile volume of business in Cleveland. The company claims to have accomplished its ends, but the pressure of a constantly growing business with a general expansion in a national way has made it impossible for the company to continue handling its own local sales.

NEW MILLER PROTECTOR FOR FEMININE FOOTWEAR

A new light-weight rubber overshoe which is being marketed under the name "Shuglov" has been introduced by the Miller Rubber Company of Akron. This new product is designed for the protection of beautiful shoes and stockings such as are now commonly worn by American women and is in itself an artistic product which is said to enhance the beauty of expensive footwear while giving protection from rain.

"Shuglovs" are made of the lightest figured rubber, washable inside and out. They have trim, decorative tops which may be worn up or down with equal smartness. The new footwear protector comes in four colors, nude, gray, brown and black, with two types of heels, universal and Cuban. The retail price is $5.00 per pair.

Buys Rubber Equipment

L. Albert & Sons, used rubber machinery dealers of Trenton, Boston and Akron, recently bought the machinery and equipment of the Kansas City Tire & Rubber Co., of Kansas City, Mo., and the Wayne Tire & Rubber Co., of Orrville, O. This equipment includes presses, mills, calenders and other tire building machinery. It is offered to the industry in working condition.

Chamberlain in Europe

Karl Chamberlain, president of the Fisk Export Tire Co., is in Europe where he is visiting a number of the company's distributors. Mr. Chamberlain returned only a few weeks ago from a business trip which took him around the world.

ELKO CHEMICAL STOCK PRACTICALLY ALL SOLD

The stock of the Elko Chemical Co., of Nitro, West Va., which was recently organized with an authorized capitalization of $350,000, has practically been sold. The company recently took over the factory and other assets of the Southern Dyestuffs Co., of Nitro.

Products manufactured by the company include Phenol, U.S.P., Ortho and Para Chlor Phenol, Para Amino Chlor Phenol, Di Chlor Phenol, Tri Chlor Phenol, Sulfuryl Chloride, Thionyl Chloride, Phosphorus Oxy Chloride and Sodium Sulfite.

The company's general offices are located at Nitro, but sales offices are maintained at Akron. William S. Gray & Co., of New York City, are their sales agents. The officers of the Elko Chemical Co., who are also the officers of the Rubber Service Laboratories Co., of Akron, are E. J. Smail, Jr., president; Carl N. Hand, vice-president; C. O. North, secretary and treasurer. These officers with Francis Seiberling of Akron, and W. D. Payne of Charleston, West Va., constitute the board of directors.

Honolulu Agent in Akron

B. L. Silverman, manager of the tire department of Theodore D. Davies, Ltd., Hawaii, and a distributor of Miller Rubber Co. tires in Honolulu, was a visitor at the Miller plant in Akron recently. In speaking about Hawaii he said that the Japanese run most of the service stations there, and that tire consumption averages in the neighborhood of 2½ replacement tires per car per year.

Ray Edson Cope

Ray Edson Cope, one of the founders of the Admiral Tire & Rubber Co., of Coshocton, O., manufacturers of cord tires and "cord type" tubes, died September 12 in Coshocton from the effect of a major operation. Mr. Cope was born in 1889 at Rogers, O., and came to Coshocton in 1923. He is survived by his wife, his parents and four brothers and a sister.

CATALPO!

Louis W. May

whose appointment as head of the Mineral Rubber department of The Warner-Quinlan Co., was announced in our last issue.

HOOD RUBBER WORKING ON 24-HOUR SCHEDULE

Although the factories of the Hood Rubber Co., at Watertown, Mass., are operating three eight-hour shifts six days a week, the volume of business in certain footwear lines is reported to be so big that the company will soon find it necessary to refuse urgent orders. Sales of rubber footwear are about 30% ahead of a year ago, while unfilled orders in units show about a 35% gain as compared with a year ago.

The company reports an urgent demand for tires which is continuing beyond all expectations. Unit tire sales at present are about 25% ahead of a year ago, while tube sales show even larger gains. Tire inventories are at a low ebb. On some sizes the supply is equal to only 20-30 days sales, whereas normally the company carries a stock good for two or three months.

Dollar sales for the entire Hood Rubber system are said to be practically the same as for last year, based on the final results for the first quarter of the current fiscal year which includes April, May and June. As footwear prices are off about 15% and tires are down 25%, this implies a very considerable expansion in unit sales.

Mason Tires on Racers

Mason "Hylastic" tires, manufactured by the Mason Tire & Rubber Co., of Kent, O., were part of the equipment of the three Stutz automobiles which smashed stock car records for 50 to 150 miles, finishing in first, second and third place in the headline event at the Atlantic City Speedway on Labor Day. It is reported that the tires were not changed during the races.

RUBBER CHEMICAL DATA ISSUED BY VANDERBILT

A loose-leaf handbook measuring 3⅞ in. by 7 in. and containing comprehensive information relative to chemicals, and chemical formulas in the rubber industry, has recently been issued by R. T. Vanderbilt Co., Inc., of New York City. The booklet opens with an introduction by Dr. A. A. Somerville, of Vanderbilt Co., on the subject of cooperative research in which he points out that the technical division of the rubber industry has been an invaluable aid in the growth and progress of the industry.

Following the introduction a description of Vanderbilt products is given, such as vulcanizing agents, accelerators, anti-oxidants, carbon, etc. This is followed by a series of technical articles, chiefly concerned with rubber chemistry. Some of the titles are as follows: "Keeping Records of Inventions and Discoveries," by Frank E. Barrows; "Anti-oxidants and Their Influence on the Deterioration of Rubber," by C. C. Davis; "Stearic Acid as a Rubber Compounding Ingredient," by W. B. Wiegand, and "Plasticity Measurements on Rubber and Rubber Compounds," by R. B. Stringfield.

A miscellaneous section follows these articles. The section is devoted to abrasion testing machines, fabrics, specifications for standard belting and ducks, various tables on load and inflation of tires; interconversion tables and conversion tables. The handbook ends with an index of subjects and authors. A critical review of the book appears in another section of this issue of THE RUBBER AGE.

77 New Dunlop Warehouse

In order to meet conditions arising from the introduction during the past few months of many new sizes and types of balloon and other tires, and to insure prompt delivery, the Dunlop Tire & Rubber Co., of Buffalo, N. Y., has in the past 45 days established an additional 77 wholesale distribution points. The company's program calls for the establishment of a few more warehouses in the next 60 days.

India Declares Dividends

The India Tire & Rubber Co., of Akron, has declared the regular quarterly dividends of 45 cents on the common stock and $1.75 on the preferred, both payable October 1 to stock of record September 20.

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Financial Items

Rubber and Motors

PRICES ON EXCHANGE REACH NEW LOW LEVEL

In the past fortnight prices on the Rubber Exchange of New York have reached new low levels for the year, September, October and November quotations touching as low as 33.10c. The futures have been influenced to a large extent by London cables reporting increases in London stocks, and operations for profits, based on the trend of the market abroad. According to F. R. Henderson, in answer to London criticism regarding the bearish trend on the Exchange, this situation is in part due to the uncertainty surrounding the status of the Stevenson restriction act. It is thought that as soon as it is definitely known whether any changes will be made in the act, Exchange prices will probably be firm.

Sales activity was not very marked in the first part of September, but on Saturday, the 17th, a turnover of 645 lots occurred, or 1,612½ long tons. This exceeds anything ever witnessed during a short session. On September 19 the largest turnover in the past thirteen days took place, namely 911 lots, or 2,277½ long tons. On the following day operations were pretty well mixed and decided signs of irregularity were noted toward the close of the session. Trading was again active, with the sale of 824 lots, or 2,060 long tons.

SUN RUBBER ERECTING TWO PLANT ADDITIONS

Two modern factory buildings of brick and steel costing in the neighborhood of $50,000 are being added to the plant of the Sun Rubber Co., of Barberton, O., manufacturers of rubber sundries. The new structures will be 60x90 and 50x105 feet and when completed will, it is said, increase the company's plant capacity about 25%.

The Sun Rubber Co. was organized in 1923 and in addition to manufacturing rubber sundries, also produces various rubber specialties. J. T. McLane is president.

Pacific Firestone Bonds

The Firestone Tire & Rubber Co. of California has been organized by the Firestone Tire & Rubber Co. to handle its western business. The new company is capitalized with $20,000,000 common stock, all of which is owned by the parent company. The California firm is being financed by $10,000,000 15-year 5% sinking fund gold bonds which are underwritten by the Cleveland Trust Co., of Cleveland, O.

Late Stock Prices

	Last Price Sept. 19	Aug. 31	—1927— High	Low
Ajax	8½	8	13	7½
Firestone	150	153	167	117
do 6% pfd.	106	106	107	107⅜
do 7% pfd.	105	103	103½	98½
Fisk	183⅛	153¼	20	147⅛
do 1st pfd.	99	85	100	81
General	165	—	165	140
do pfd.	—	102½	106	99¼
Goodrich	77	71¾	73¼	42¾
do pfd.	107	104	104¼	95
Goodyear Com.	57¼	—	58	50⅝
do pr pfd.	—	111¾	118⅛	104½
do pfd.	119½	116	117½	98½
Hood	—	—	47	42½
India	24½	21½	30	28
Intercontinental	12½	—	15¾	11⅜
Kelly Springfield	29	27⅞	30¾	9½
do 1st pfd.	87	81	84½	44
do 8% pfd.	—	81¾	84¾	35
Lee	14½	11¾	14⅞	7
Miller	26¼	26	36¾	26½
do pfd.	99¼	98	104	100
Mohawk	18	18	25	15
do pfd.	60	—	65	65
Seiberling	35	32	38⅛	21⅜
do pfd.	102½	101	103	96
Star	1½	—	2	2
U. S. Rubber	55½	47	67¼	37¼
do pfd.	101¼	94⅞	111⅜	85¾
U. S. Rubber Reclaiming	—	—	12	12
do p pfd.	—	—	24	24
do series A.	—	—	15	15

SAYS NORTHERN RUBBER SALES AHEAD OF 1926

Owen Moynihan, secretary and sales manager of the Northern Rubber Co., of Akron, who has recently returned from a trip through New England, states that sales of the company for the first eight months of the current year have jumped 122% over sales in the corresponding period of 1926.

"Branches of mail order houses, which are being opened extensively and the flood of low priced tires now on the market does not affect the class of trade to which we are catering," Mr. Moynihan said.

Goodrich Building Burned

A fire of unknown origin recently damaged the stock and building of the B. F. Goodrich Co., in Indianapolis, Ind., to the extent of nearly $50,000, according to a report from that city.

RUBBER STOCKS CLIMB IN EXCHANGE TRADING

With public sentiment toward tire company stocks changing, after the disastrous 1925 crude rubber fluctuations, and after the generally excellent showing on the part of a number of the companies in the half-yearly 1927 reports, it is natural that trading in these stocks should become active. In the past fortnight, Lee, Goodyear, General and Seiberling have reached new high ground on the curb and on the stock exchange.

Lee Rubber & Tire has been a strong spot in the tire group on the Exchange, pushing into a new high listing at 14⅞ on September 20 from a quotation of 11½ early in September. Goodyear common has been climbing steadily since the middle of September, finally touching a new high on the 20th at 58, or 6 points advance since the first part of September. On the curb, General Tire & Rubber common has been trading around 155 and 160, but reached new ground on the 16th at 165.

Following the sudden rise of Seiberling common stock from 35¼ to 38⅞ on September 15, Frank A. Seiberling stated that it was the result of stock gamblers: "There is no big pool of speculative buyers at work. The controlling interests of the company are closely held, but there are buyers who think Seiberling is a gold mine and they are all trying to dig in. The immediate future does not justify such a conclusion. The company is healthy and strong, but the outlook is for an average fall and winter."

New Inland Tires

The Inland Rubber Co. of Chicago, has announced a new line of tires which will be known as All-Service cords. They will carry a 12,000-mile guarantee and come in a complete range of sizes. Reinforced sidewalls are a feature of the new casings. George P. Gilman is president of the company.

Closing Prices on Rubber Exchange of New York, Inc.

SEPTEMBER 6 TO SEPTEMBER 20

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sales*
Sept. 6	33.80	34.00	34.20	34.40	34.60	34.90	35.20	35.40	35.50	35.70	35.80	36.10	50
7	33.80	34.10	34.20	34.40	34.80	35.00	35.20	35.60	35.80	35.90	36.00	36.20	79
8	33.90	34.00	33.90	34.30	34.60	34.80	35.00	35.30	35.50	35.70	35.80	36.10	320
9	33.70	33.70	33.80	34.16	34.40	34.60	35.00	35.30	35.50	35.70	35.80	36.10	645
10	33.70	33.80	33.90	34.10	34.30	34.60	35.00	35.20	35.30	35.60	35.90	36.10	347
12	33.60	33.70	33.80	34.10	34.30	34.60	34.90	35.20	35.30	35.60	35.80	36.00	199
13	33.90	33.90	34.10	34.40	34.70	34.80	35.30	35.50	35.60	35.80	35.90	36.10	300
14	33.90	34.00	34.10	34.50	34.60	34.90	35.40	35.50	35.70	35.90	36.00	36.20	437
15	33.90	33.90	34.00	34.30	34.60	34.90	35.20	35.30	35.40	35.60	35.80	36.00	634
16	33.60	33.60	33.70	33.90	34.10	34.40	34.60	34.90	35.10	35.30	35.40	35.70	774
17	33.60	33.40	33.50	33.60	33.70	34.00	34.20	34.50	34.60	34.90	35.10	35.20	645
19	33.20	33.20	33.20	33.20	33.40	33.70	33.90	34.10	34.30	34.60	34.60	35.00	911
20	33.10	33.10	33.10	33.20	33.30	33.50	33.70	34.00	34.20	34.30	34.50	34.70	824

(*) In lots of 2½ tons each

RUBBER ACCOUNTANTS' MEETING IN OCTOBER

Cost accountants of the rubber companies in the Akron district will hold a cost conference in Cleveland on October 27, probably at the Hollenden Hotel. The program has not yet been made public. All accountants and cost experts of the companies are invited to attend. The presiding officer at the conference will probably be H. D. Hoskin, of the Goodyear Tire & Rubber Co., who is chairman of the accounting committee of the Rubber Association of America. Preliminary details are being handled by C. W. Halligan, who is manager of the Association's cost accounting department.

A similar conference was held at Atlantic City in May on behalf of the companies in the New Jersey district. Uniform cost accounting practices are discussed at the conferences.

COMPILE SAFETY CODE FOR RUBBER FACTORIES

The U. S. Labor Department has adopted a safety code for rubber factory equipment and is distributing it in booklet form. The code was compiled by representatives of rubber goods manufacturers, rubber making machine manufacturers, government officials and other interested groups. The adoption of the code was brought about as a part of the campaign being waged in the rubber industry to reduce the accident toll. The rubber mills and calenders have been ranked among the more dangerous pieces of industrial equipment.

Ernest W. Beck, who is in charge of safety work for the U. S. Rubber Co., was secretary of the committee of 29 which developed the code. This committee included 13 men who were directly connected with rubber manufacturing companies, or companies manufacturing machinery designed particularly for rubber goods factories. The code, as adopted, covers all mechanical hazards connected with mills and calender machinery at the point of operation. It is planned to carry the work further so that eventually it will embrace the entire manufacturing processes of the industry.

R. I. Wishnick in West

R. I. Wishnick, of the Wishnick-Tumpeer Chemical Co., New York City, is on a business trip in the middle west which will include a visit to the company's plant at Louisville before he returns. He is expected back about September 26.

Woven Hose Dividend

The directors of the Boston Woven Hose and Rubber Company declared an extra dividend of $2 a share on the common stock, payable November 15 to stock of record September 19. The company paid a previous regular dividend of $1.50 a share on September 15.

Goodyear Transfers Myrick

Floyd F. Myrick, who joined the Goodyear Tire & Rubber Co. in Akron in 1918, from where we went to the California factory in 1920, has been transferred to the company's new factory in Wolverhampton, England, where he will be manager of the tube department.

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GENERAL MOTORS HAS AUGUST SALES RECORD

The General Motors Corporation sales of cars in August, both retail sales by dealers to consumers as well as sales by General Motors to its dealers, established a new high record for the month. Retail sales by dealers to consumers were 158,619 cars and trucks, an increase of 36,314 or 29.7 per cent over August, 1926, sales of 122,305.

Sales by car divisions in August were 155,604 cars and trucks, compared with 134,231 in August, 1926, an increase of 21,373 or 15.9 per cent. Monthly sales to dealers are as follows:

	August	*July*	*June*
1927	155,604	136,909	155,525
1926	134,231	87,643	111,380

Monthly sales by dealers to consumers are as follows:

	August	*July*	*June*
1927	158,619	134,749	159,701
1926	122,305	101,576	117,176

Todd Joins Quaker Rubber

John H. Todd has resigned as sales manager of the Tyer Rubber Co., of Andover, Mass., and become manufacturers' agent for the Quaker City Rubber Co. and the Taunton Rubber Co. Mr. Todd, whose headquarters will be in Boston, will handle the products of these companies in New England exclusively.

The Philadelphia Rubber Works Company

Manufacturer of

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CONSIDER SUCCESSORS TO LATE B. G. WORK

It is believed that the directors of the B. F. Goodrich Co. will choose a successor to the late Bertram G. Work, president of the company, at a meeting to be held on October 26. Mr. Work died in St. Moritz, Switzerland, August 30. Three men, who are now Goodrich vice-presidents, are believed to be possible candidates to succeed Mr. Work. They are W. O. Rutherford, who is in charge of sales; C. B. Raymond, vice-president and chairman of the board of directors, and H. Hough, vice-president and comptroller. L. D. Brown, vice-president in charge of the treasury, who had also been mentioned as a possible candidate, died September 18 aboard a train on his way to Rochester, N. Y.

No official statement has come from the Goodrich offices to indicate who will be chosen, but it has been rumored that the new president must be a man whose knowledge is not confined to any one branch of the industry, such as sales, production or accounting, but a man who "can co-ordinate all activities." It is generally believed that the company's new head will be chosen from the board of directors.

Rubber Proofers Meet

The Proofers' Division of the Rubber Association of America held a meeting at the Hotel Buckminster, Boston, on the morning of September 13 and was entertained in the afternoon at the Bluefields Country Club by the Meade Rubber Co. A putter, which was offered as first prize in the golf tournament, was won by J. T. Callahan, of the Archer Rubber Co. M. Lincoln Greene, of the Clifton Manufacturing Co., won second prize.

Cabot's Carbon Black Helped Treble Tire Mileages and is helping obtain fleet tire business because of its remarkable uniformity.

Such uniformity assures the high average mileages sought by fleet owners.

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CATALPO!

ENGLAND DISTURBED BY SMUGGLING OF RUBBER

A number of English plantation companies in Malaya have latterly criticized the British Government for failing to stop smuggling of rubber from Malaya, and the matter has been discussed by several companies at their annual meetings. So extensive has the smuggling become, that it is believed in some quarters the practice will be largely responsible for the inability to increase the exportable quota of British rubber, now limited to 60%.

In bringing this question before the annual meeting of the Balgownie Rubber Estates, Ltd., R. C. M. Kindersley, chairman, is quoted as saying: "There is one matter of very grave importance to the rubber producers of Malaya, and that is the failure—I might almost say the complete failure—of the Government to put a stop to smuggling. I have heard the monthly figure of smuggled rubber estimated as high as 3,000 tons. If that is correct, or even anywhere nearly correct, it would be quite sufficient to prevent the restriction scheme from raising the price of rubber to the pivotal price of 1s 9d. Taking the present price at 1s 5d and the estimated restricted output at 200,000 tons per annum, a loss of 4d per pound would mean no less than £7,366,666 (about $37,000,000) not to speak of the fact that any increase in the export allowance is prevented."

Mohawk Man Promoted

T. D. Struthers, office manager of the Los Angeles branch of the Mohawk Rubber Company, has been transferred to Akron, where he will directly assist J. F. Jones, Mohawk sales manager. Mr. Struthers entered the rubber industry with the Portage Rubber Company, becoming assistant sales manager. Later he went to the Williams Tire Corp., of Akron, as sales manager. He joined the Mohawk company in 1926.

Move Mason Export Dept.

The Mason Tire & Rubber Co., of Kent, O., has announced the removal of their export department from the company's general offices in Kent to New York City, where it will be located at 549-551 West 52nd street. Vincent Aguirre, who has had charge of Mason's export sales for the past three years, will continue the management of the department at its new address.

India Tires Abroad

Arrangements have been made by the India Tire & Rubber Co., of Akron, for the distribution of their tires in Portugal, Hawaii and Austria, according to Joseph Andreoli, export manager. The India company's interests in Portugal will be handled by Almeidas & Co., of Porto, and in Hawaii by the Quality Auto Supply of Hilo. The Austrian distributor is J. Frankel, of Vienna, who is reported to be the largest tire distributor in Austria. His initial order was believed to be the largest shipment ever made to Austria by any American tire manufacturer.

Dural Rubber Busy

Dural Rubber Co., Flemington, N. J., is very busy in all its departments and has leased an adjoining building to be used as packing and inspection departments. The company has an order for a quarter of a million of rubber balls for universal joints for cars. The company also manufactures auto tubes, linings for milking machines and rubber attachments for aeroplanes and automobiles.

Fire at Hood Rubber Plant

A small fire occurred recently in one of the buildings of the Hood Rubber Co., at Watertown, Mass., resulting in damage of $1,000 to the building. The fire, it was said, started in one of the heaters for the battery box materials. Dense smoke filled the building and the fire spread into the partitions and between the first and second floors before it was extinguished.

Prison Reclaiming Plant

Convicts may be put to work in repairing and reclaiming tires for the State of New Jersey. Governor A. Harry Moore and budget officers recently discussed the proposition to install a tire reclaiming and repair industry in the New Jersey State Prison or Rahway Reformatory. Last year more than $50,000 was spent by the State for tires and tubes.

Firestone Men Get Prizes

The suggestion board of the Firestone Tire & Rubber Co., of Akron, has again awarded a number of prizes to the company's employees for suggestions in labor-saving devices. A. A. Sutterly in the steel production division received the largest prize of $50 for a method of manufacturing an improved type of brake shoe. Other prizes, ranging from $10 to $25 were awarded.

Get Goodyear Service Pins

P. W. Litchfield, president of the Goodyear Tire & Rubber Company, Akron, presented company service pins to G. M. Hartline and H. H. Garman recently in recognition of their service to the company for 25 years. With each 25-year service pin the company also gave $250 in gold.

Rubber Card Table Cover

The Seiberling Rubber Company, of Akron, has announced a new type of card table cover selling under the trade name of "kemi-suede" which the company claims is not only waterproof and inkproof, but generally proof against all kinds of stains.

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THE ADAMSON MACHINE CO.

Akron Ohio

MANUFACTURERS seeking competent help—TECHNICAL MEN seeking good positions—DEALERS having good used machinery—will find the CLASSIFIED SECTION of THE RUBBER AGE of advantage in reaching all their prospects in the rubber industry in the shortest possible time. TRY IT!

Cyanamid Extra Dividend

The American Cyanamid Co. has declared an extra dividend of one-half of 1% and the regular quarterly dividend of 1½% on the company's $20 par common stock. The regular quarterly dividend of 1½% was declared on the preferred.

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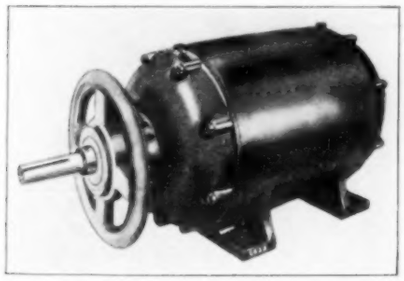
New Equipment for Rubber Factories

NEW BRIDGWATER LIGHT WEIGHT CORE SECTIONS

Considerable interest is being shown in the new light alloy and steel core section that is being put on the market by the Bridgwater Machine Company of Akron. The manufacturers appear to have overcome the objections to the present cast iron sections. The new core sections are claimed to overcome breakage as well as cutting at trim line which are two big items of expense to tire manufacturers. It also produces a core that is at least 50 per cent lighter than present cast iron or steel sections and is far more substantial than wood sections which have been used to eliminate excessive weight. Further details concerning this new equipment will appear in the next issue of THE RUBBER AGE.

ANNOUNCES IMPROVED SPEED TRANSMISSION

A variable speed transmission which is claimed to be especially adaptable to rubber machinery has recently been introduced by the Stephens-Adamson Manufacturing



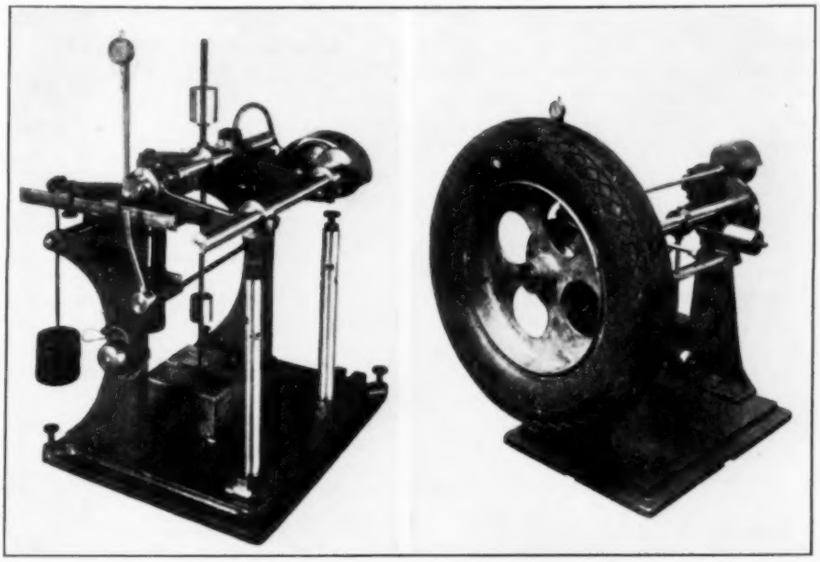
JFS Variable Speed Transmission

Co., of Aurora, Ill. This transmission, which is illustrated herewith, performs the function of receiving power at high speeds and delivering that some power at lower speeds for the direct operation of machinery equipment to which the unit may be attached. The rate of rotation of the low-speed shaft may be decreased or increased over a wide range according to the manufacturers. Turning a control wheel makes thousands of different speeds instantly available.

It is claimed that the ingenious application of an entirely new principle has resulted in this variable speed changing device. The actual transmission of power is accomplished through the resulting action of genuine roller bearings revolving in polished races, submerged in oil. The pressures between the rollers and races sufficient to transmit their rated horsepowers, are only a fraction of the allowable unit pressures common to the usual ball and roller bearing loadings.

The machine is marketed under the trade name of the JFS Variable Speed Transmission.

NEW TIRE BALANCING MACHINE IS OFFERED



Without Tire or Adapter **With Tire in Place**

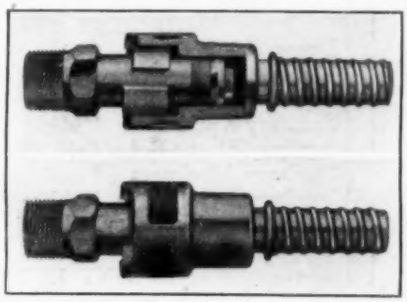
The Tinius Olsen Testing Machine Co., of Philadelphia, Pa., has placed on the market a machine for balancing automobile and truck tires with accuracy on a production basis. The machine is known as the Olsen-Lundgren tire balancing machine. For operation, the tire is mounted on an adapter connected to the arbor, the latter itself forming a scale. The tire is free to move on the shaft through ball bearings, so that it will come to rest at the bottom where greatest weight is located.

The tire and adapter is then fixed with the central shaft which constitutes the scale, and turns 90 deg., so the dial will automatically indicate any static unbalance in ounce-inches. The tire can also be operated on the shaft by power, and the amount of unbalance will be indicated automatically on the dial, and by stopping the motor at the point shown by the indicator, angle of unbalance is noted.

The machine is of compact construction, mounted on a cast-iron base. The motor is mounted on the pedestal at the rear of the machine, and the contol switch is conveniently located at the side. The dial in front of the machine gives direct reading, since no corrections are necessary for different weights of tires, as the direct mounting on the central weighing shaft gives the balance irrespective of the weight or size of the tire. The machine may be operated entirely by hand.

Springless Hose Coupling

A plain type air hose coupling which is connected or disconnected with one-quarter turn and is designed without springs or loose parts is manufactured by the Robinson Machine Co., of Muskegon, Mich. A specially treated leather gasket is used and is expanded by a V-shaped ring when the air pressure is applied. This makes it a pressure seated air hose coupling which the manufacturers claim is air-tight under any pressure conditions. The gasket, it is claimed, will not corrode nor pull out of



Springless Air Hose Coupling

the coupling and when it shows any perceptable wear, it may be corrected by a slight turn of the nut. The Robinson "Superior" plain type air hose couplings are made interchangeable in ⅜", ½" and ¾" sizes for pipe and hose lines.

DUNLOP PROCESS FOR ARTIFICIAL CATGUT

The Dunlop Rubber Company of England, claims to have perfected a process for making artificial catgut by impregnating a number of threads of silk, ramie, cotton, wool, hemp, jute, artificial silk, or other fibers or fine threads with a solution of deresinated gutta percha, to which rubber may be added, together with vulcanizing ingredients if desired. Immediately after or during the process of impregnation the threads are twisted together. Vulcanization and drying may be carried out by passing the cord through a chamber of suitable size heated by warm air. A suitable varnish may be used before or after vulcanization for giving the necessary finish.

New Aetna Circulars

The Aetna Rubber Co., Cleveland, has issued a set of circulars descriptive of their battery containers and hard rubber parts made for battery manufacturers. Several different models of containers are offered.

New Mohawk-Hobbs Guides

The Mohawk-Hobbs guides for automobile tourists are entirely completed except for two sections, according to the *Mohawk Messenger*, a house organ of the Mohawk Rubber Company, of Akron. The two sections to be completed include the "Colorado-to-Gulf and Dixie Overland" guide and the "Shenandoah Valley Route." Three new guides and three revisions have recently been published. The new guides include the Lincoln Highway, east; the New York-Montreal tour and the Old Oregon Trail.

Charles C. Spies Married

The marriage on August 30 of Charles C. Spies, sales manager of the Toycraft Rubber Company, Ashland, O., to Edith Marie, daughter of Mr. and Mrs. Charles J. Bengston, of Portland, Conn., has been announced. The marriage took place in Portland, Conn.

In an effort to test the advisability of including rubber rafts as standard equipment for aviators flying over water, Corporal Richard L. Huffman, of the Marine Corps, at Quantico, Va., inflated a collapsible rubber raft while falling 3,000 feet from an airplane to the Potomac River on September 2. When Huffman's parachute opened in mid-air he unpacked the raft and inflated it with tubes of carbon dioxide. As he reached the water, he dropped the raft and released himself from his parachute. He then climbed aboard and rowed to shore.

The raft used by Huffman was similar to that which carried Commander Byrd and his crew to shore at Ver-Sur-Mer, France.

BIG ELECTRIC SIGNS FOR GOODYEAR PLANT

Plans are being made for the erection of two large electric signs at the plant of the Goodyear Tire & Rubber Co., of Akron. One sign, reading "Goodyear Wingfoot" in letters eight feet high, is to be erected on Goodyear Hall, twenty-five feet above the roof. This sign will be illuminated with what is said to be a new kind of light known as "Neon Light" furnished in glass tubes. The lights will be in three colors, orange, blue and green.

The other sign will be placed on the roof of the engineering building and will be made of the usual type of letters in electric sign illumination.

Fire Destroys Rubber

Several large piles of reclaimed rubber belonging to the Raymond Rubber Co., Titusville, N. J., were recently destroyed by flames. The plant was not damaged. The Raymond Co. closed operations several weeks ago because of a slump in business. The company reclaims rubber exclusively.

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THE GENTLEMAN FROM MINCING LANE
reports current opinion in London's famous rubber market in every issue of THE RUBBER AGE

The LONDON LETTER

The Gentleman Says the American Statisticians Were Right

LONDON, 10th September, 1927.

AUTUMN is the busiest season of the year for industry generally. Therefore, it is quite opportune to take a "look-see-fore-and-aft" as the Briton says when returning from his yachting holiday. Let us look ahead and see what the prospects are, both for the British rubber plantation industry and British industry generally.

The Mincing Lane rubber market has been marking time for weeks, diminutive orders of five or ten tons settling the prices day by day. American manufacturers have not, therefore, purchased much rubber in London lately. The idea is held in London that American manufacturers' stocks of raw rubber must be somewhat lower today than they were at the first of the year. World consumption has exceeded shipments from the producing countries by some 10,000 tons, and at the same time, 10,000 tons have been added to the the total of London stocks. Hence the view is held that American holdings of raw rubber must have declined. Of course there are other factors, such as rubber afloat, which are not taken into account in this rough calculation.

We hear over here that the American tire manufacturers are bearish as to the outlook for tire sales this fall. Consequently, it is thought that they are not specially concerned if their supplies of raw rubber do not exceed three months of manufacturing capacity.

If this proves to be the case, the group of American statisticians who visited London early in the year, were not only right in their judgment that the Stevenson Scheme would be allowed to relapse to 60% on the 1st of May, but it would appear now that it can safely be left there for the balance of the year. However, European consumption has increased in 1927. It is in this part of their estimates that the British and American figures show the greatest disgreement. So London continues bullish, holding out for 36-cent rubber, whereas American buyers have 30-cent rubber in mind for fall buying.

TAKING a detached view of rubber prices, one would say that, on the whole, the last twelve months' record is satisfactory. There has been but small variations from Quarter to Quarter and the price has been steady at reasonable figures. Of course, the prospects for British dividends in 1927 are not as hopeful as they were in 1926; 6% restriction at 34 cents will not produce the dividends that 100% provided at 40 to 50 cents. Still the price is plainly very remunerative at present levels although like many manufacturers the world over who made big war profits, to have to go back to 10%, 15% and 20% on their money seems a severe cut.

This feeling of semi-irritation is naturally accentuated whenever the British planters think of the Dutch, and note the huge quantities of Dutch rubber coming into the market without any restrictions whatever. Your contemporary of the same name in London (*Rubber Age*) hopes that the movement in Holland for forming a selling combine is significant of a restive feeling of the Dutch that something must be done by them to bolster up the market. This writer quotes George Canning, who wrote over a hundred years ago his resentment against Dutch duties on English goods as follows:

> "In matters of commerce the fault of the Dutch
> Is giving too little and asking too much,
> With equal protection the French are content,
> So we'll lay on Dutch bottoms just 20 per cent."

This same rubber journal seems to be a bit uneasy about restriction as a permanent policy, when it says, editorially:

"If one takes a long view of the rubber question, there seems to be little doubt that the salvation of the plantation industry will depend upon an immeasurably greater consumption of the raw material rather than the permanent control of production."

THE STATIST, a London financial publication, which has an excellent rubber correspondent, also sees a possible use for the present sagging prices, and holds that things must get worse before they get better: "From the purely market point of view the present reaction in prices will not be unwelcome to those who desire higher levels in due course. Assuming that the main outlines of restriction are to be maintained, a period of dullness at the present time when details as to assessments and excess credits are being considered, would be more likely to influence greater stringency in any possible changes than if the market had been strong and prices high."

Turning now to the general British industrial position, the press has been forced to take an early assay of the past and future by a speech made by the Chancellor of the Exchequer, in which he appeared to be quite optimistic regarding the industrial position. The fact is that British industry up to April, 1925, had been slowly but steadily expanding. In April of that year the pound sterling was re-established on the gold standard and in August the coal subsidy was granted by the Government.

Here at the first of September, 1927, after two years of ups and downs, it now looks as if producers were back again on to the slow, steady, upward curve of the early months of 1925. But it appears that every foot of the way will be a painful struggle on account of the severity of world competition in all markets, including the British home market. However, you must not forget that the best in British character usually comes out when conditions are bad and tough Anglo-Saxon staying powers have to be thoroughly tested and brought out.

Yours faithfully,

THE GENTLEMAN FROM MINCING LANE.

LATE MARKET PRICES

Crude, Scrap & Reclaimed Rubber - Cottons and Fabrics

SEPTEMBER 21, 1927

COTTON

WITH the opening of September, cotton trading activity was brought almost to a standstill awaiting the Government report forecasting the probable yield. The report was made public on September 8, in which the condition of the crop was placed at 56.1% of normal, and indicating a yield of 12,692,000 bales. The report was more bullish than expected, with the result that prices jumped $9 a bale and spot middling uplands rose to 23.90. Late prices follow:

	High	Low	Sept. 20 Close	Sept. 2 Close
October	20.90	20.02	20.05	22.48
December	21.25	20.37	20.42	22.71
January	21.25	20.35	20.39	22.80
March	21.55	20.63	20.65	23.00

Tire Fabrics

The tire fabric market has lately been exceedingly quiet, due, chiefly, to the uncertainty of the cotton situation. Traders are waiting for the market to settle before putting in any large-sized orders. Early in the week of September 12 the market took on a little more life when sales of between 100,000 and 250,000 pounds were put through. After this spurt, however, activity has been slight. Late quotations follow:

CORD			
Peeler, carded, 23/5/3	lb.	.46½ @	.48
Peeler, carded, 23/4/3	lb.	.47 @	.49
Peeler, carded, 13/3/3	lb.	.43 @	.45
Peeler, carded, 15/3/3	lb.	.44 @	.46
Egyptian, carded, 23/5/3	lb.	.59 @	.61
Egyptian, combed, 23/5/3	lb.	.62 @	.64
CHAFERS			
Carded American, 8 oz.	lb.	.41 @	.43
Carded American, 10 oz.	lb.	.46 @	.48
Carded American, 12 oz.	lb.	.42 @	.46
Carded American, 14 oz.	lb.	.42 @	.46
LENO BREAKER			
Carded American, 8½ oz.	lb.	.43 @	.45½
Carded American, 10¼ oz.	lb.	.43 @	.44½
SQUARE WOVEN			
Carded American, 17¼ oz. 23-11 ply	lb.	.47 @	.48
Carded American, 17¼ oz. 10-5 ply	lb.	.42 @	.44

Sheetings

The prevailing uncertainty of the cotton market has been felt in the case of sheetings, which have been very moderately traded in with a few scattered sales in the past fortnight. On September 19, a few 40-inch, 2.85-yard brought 13¼c, while 40-inch, 3.75-yard brought 10½c. Prices have not been firm and quotations are still moderately high. Late prices follow:

40-inch 2.50-yard	yd.	.14 @	—
40-inch 2.85-yard	yd.	.12 @	.13
40-inch 3.15-yard	yd.	.13¼ @	.14
40-inch 3.60-yard	yd.	.12 @	—
40-inch 3.75-yard	yd.	.10¼ @	.10½
40-inch 4.25-yard	yd.	.09 @	.09½

Ducks

Only small orders have been placed for cotton ducks, the larger buyers preferring to stand by and watch the situation. Trading was fairly active on double filling enameling duck in the first part of September, but thereafter the demand became backward. On the 14th it was reported that some rubber manufacturers were on hand for sizeable quantities of various constructions of heavy cotton. Recent quotations follow:

Belting and Hose	lb.	.37 @	—
Enameling	lb.	.37 @	.45
Shoe Ducks	lb.	.34 @	.40
Single filling	lb.	.17 @	.20
Double filling	lb.	.19½ @	.22

RECLAIMED RUBBER

Reclaimers report a continuance of the good demand for stocks noted in our last issue. Rubber plants are increasing their production and using larger percentages of reclaims than ever before. Prices are firm with no changes recorded within the past fortnight. Quotations follow:

High Tensile			
Super-Reclaim No. 1 Black	lb.	.17½ @	.18
Super-Reclaim No. 2 Black	lb.	.14 @	.14½
High Tensile Red		.14 @	.14½
Shoe			
Unwashed	lb.	.08 @	.08¼
Washed	lb.	.10¼ @	.10¾
Tube			
No. 1 (Floating)	lb.	.17 @	.17½
No. 2 (Compounded)	lb.	.13½ @	.14½
Tires			
Black, washed		.10 @	.10¼
Black, unwashed		.08¼ @	.08½
Black selected tires	lb.	.08¾ @	.09
Dark Gray	lb.	.12 @	.12¼
Light Gray	lb.	.13 @	.13¼
White	lb.	.15 @	.15½
Truck, Hvavy Gravity	lb.	.07½ @	.07¾
Truck, Light Gravity	lb.	.08 @	.08¼
Miscellaneous			
Mechanical Blends	lb.	.07 @	.08
Red	lb.	.14 @	.14½

SCRAP RUBBER

Scrap dealers report a less active demand for supplies from rubber reclaimers than was in evidence earlier in the month. This condition is difficult to understand inasmuch as reclaimers report a steady volume movement of stocks. Scrap supplies are somewhat larger at this writing, with prices easier on several grades. Quotations follow:

(Prices to Consumer)

Auto tire peelings	ton	34.00	@36.50
Standard White auto	ton	57.50	@60.00
Mixed auto	ton	24.00	@25.00
Bicycle tires	ton	24.00	@25.00
Clean solid truck tires	ton	25.00	@26.00
Boots and shoes	lb.	.01¾ @	.01⅞
Arctics, trimmed	lb.	.01¼ @	.01⅜
Arctics, untrimmed	lb.	.00⅞ @	.01
Inner tubes, No. 1	lb.	.08 @	.08¼
Inner tubes, No. 2, compounded		.05¾ @	.06
Inner tubes, Red	lb.	.06½ @	.06¾
Air Brake Hose	ton	35.00	@37.50
Rubber Hose	ton	15.00	@17.00

CRUDE RUBBER

SPOT prices of ribbed smoked sheets in the outside market have reflected the same bearish trend in the past thirteen days as has occurred on the Rubber Exchange. Smoked sheets touched the price of 33⅛ on September 20, which is the lowest quotation in three years. A general lack of support has been a feature of the market. Buyers have shown little confidence in present levels and apparently will not place anything beyond immediate requirements. Prices have generally been easy, with future deliveries of ribbed smoked sheets quoted at a small premium over the spot basis.

Plantations—			
Ribbed Smoked Sheets			
Spot	.33⅛ @		.33⅜
October	.33⅛ @		.33⅜
November/December	.33¼ @		.33½
January/March	.34 @		.34¼
First Latex, crepe spot	.33¼ @		.33½
Amber Crepe, No. 2, spot	.28⅜ @		.28⅝
Amber Crepe, No. 3	.26⅞ @		.27⅛
Amber Crepe, No. 4	.26⅜ @		.26⅝
Brown Crepe, Rolled	.26 @		.26¼
Brown Crepe, Clean, thin	.28¼ @		.28½
Brown Crepe, Specky	.27½ @		.27¾
Liquid Latex, per gal.	1.50 @		1.75
Pontianac—			
Bangermassin	Nominal		
Palembang	Nominal		
Prime Pressed	Nominal		
Sarawak	Nominal		
Paras—			
Up-river Fine	.27 @		.27½
Up-river Medium	.24 @		.25½
Up-river Coarse	.17½ @		.18
Acre Bolivian, fine	.27¼ @		.27¾
Tapajos, fine	.39 @		—
Cut Beni Bolivian, fine	.45 @		—
Caucho Ball—			
Upper, shipment	.18 @		.18½
Island, fine	— @		.22
Centrals—			
Corinta, scrap	.27 @		—
Esmeraldo, sausage	.20½ @		.21
Guayule, washed and dry	— @		.28
Africans—			
Benguela, No. 2	Nominal		
Congo, upper, black	Nominal		
Congo, upper, red	Nominal		
Balata—			
Block, Colombia	35½ @		.38
Block, Cuidad	.34½ @		.35
Gutta Percha—			
Siak	.24 @		—
Red Macassar	3.00 @		—

LONDON MARKET

Standard Ribbed Smoked Sheets—*Buyers*		
Spot	.15⅞ @	.16d
September	.15⅞ @	.16d
October/December	.16⅛ @	.16¼d
January/March	.16½ @	.16⅝d

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—*Sellers*		
Spot	.15¾ @	—
September	.15¾ @	—

Recent daily closing prices on the Rubber Exchange of New York are shown on the Financial Page in the News Section of this issue. Daily spot prices of Ribbed Smoked Sheets are given in the Statistical Section.

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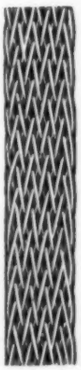

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LATE RUBBER CHEMICAL PRICES

Accelerators — Colors — Softeners — Compounding Materials

SEPTEMBER 21, 1927

CONDITIONS in the chemical and compounding materials market have improved materially within the past few weeks. Rubber factories have shown greater activity since Labor Day and have increased their production schedules, resulting in a better movement of all lines of rubber chemicals. Prices have been firm with few changes reported.

Stabilite, the new anti-oxidant recently introduced to the industry, is said to stabilize and even out the working of compounds, to stabilize curing and the life and wear of products. The new low temperature accelerator, Thermlo-F, also announced recently, was developed for short cure molded tubes, but it can also be used in drug sundries, pure gum goods, etc. Both materials will be found listed below.

ACCELERATORS

Organic				
A-1	lb.	.70	@	.80
A-11	lb.	.75	@	.90
A-16	lb.	.65	@	.85
A-19	lb.	.75	@	.90
Aldehyde ammonia, crystals	lb.	.65	@	.70
Aniline oil, drums	lb.	.17	@	.17½
Crylene	lb.	.70	@	—
paste	lb.	.50	@	—
Di-Ortho-Tolylguanidine	lb.	.85	@	.90
Diphenylguanidine	lb.	.68	@	.72
Ethylidene aniline	lb.	.60	@	.65
Excellerex	lb.	.35	@	.40
Formaldehyde Aniline	lb.	.38	@	.42
Grasselerator 102	lb.	.65	@	.70
Grasselerator 552	lb.	4.45	@	4.60
Grasselerator 808	lb.	1.05	@	1.35
Grasselerator 833	lb.	1.50	@	1.75
Heptene	lb.	.55	@	—
Hexamethylene-tetramine	lb.	.65	@	.70
Lithex	lb.	.18	@	.20
Methylenedianilide	lb.	.38	@	.40
Monex	lb.	3.25	@	—
Piperidine-Piperidyldithio-Carbamate	lb.	4.45	@	4.60
Quinoidine	lb.	.40	@	—
R & H 40	lb.	.50	@	.55
R & H 50	lb.	.50	@	.55
Safex	lb.	1.20	@	1.25
Tensilac, No. 39	lb.	.55	@	.60
Tensilac, No. 41	lb.	.65	@	.70
Thermlo F	lb.	.50	@	.55
Thiocarbanilide, kegs	lb.	.26	@	.28½
Thionex	lb.	3.25	@	—
Trimene	lb.	.75	@	—
base	lb.	1.20	@	1.35
Triphenylguanidine	lb.	.65	@	.70
Vulcanex	lb.	.82	@	.86
Vulcone	lb.	.70	@	.74
Vulcanol	lb.	1.05	@	1.08
Z 88	lb.	.75	@	1.00
Inorganic				
Lead, sublimed blue	lb.	.08¼	@	.08¾
Lead, white	lb.	.08¼	@	.08¾
Litharge, domestic	lb.	.11	@	.13
Magnesia, calcined, light	lb.	.06	@	.12
heavy	lb.	.04	@	.04½

COLORS

Blacks (See Compounding Materials)				
Blues				
Prussian	lb.	.33	@	.35
Ultramarine	lb.	.08	@	.35
Browns				
Sienna, Italian	lb.	.05	@	.12½
Umber, Turkey	lb.	.04½	@	.06
Greens				
Chrome, light	lb.	.27	@	.31
medium	lb.	.29	@	.32
dark	lb.	.31	@	.34
Chromium Oxide, bbl.	lb.	.35	@	.38
Reds				
Antimony crimson, 15/17	lb.	.40	@	—
sulphur free	lb.	.50	@	.52
golden 15/17 F.S.	lb.	.16	@	.25
Indian English (dom.)	lb.	.08	@	.10
Oximony	lb.	.13¼	@	—
Para toner	lb.	.13	@	.14
Red oxide, reduced	lb.	.10	@	.11
pure	lb.	.14	@	.15
Venetian red	lb.	.02	@	.06
Vermillion, quicksilver, English	lb.	1.85	@	1.95
Whites				
Lithophone, Akcolith	lb.	.05 3/5	@	.06
Lithophone, Azolith	lb.	.05¼	@	.05¾
Lithopone, Vanolith	lb.	.05¾	@	—
Titanox	lb.	.10	@	.10½
Cal. Base Pigment	lb.	.10	@	.10½
Zinc Oxide—American Process				
American Azo:				
ZZZ (lead free)	lb.	.06½	@	.07
ZZ (leaded)	lb.	.06⅝	@	.07⅛
Zinc Oxide—French Process				
White seal	lb.	.11⅞	@	—
Green seal	lb.	.10⅞	@	—
Red Seal		.09⅞	@	—
Yellows				
Chrome	lb.	.17	@	.20
Ocher, French medium	lb.	.03½	@	.06
domestic	lb.	.01⅝	@	.02

COMPOUNDING MATERIALS

Aluminum Flake	ton	21.85	@	24.50
Ammonia carbonate	lb.	.13½	@	.14
Are-O-Sol	ton	8.00	@	11.00
Asbestine	ton	14.75	@	18.00
Barium carbonate	lb.	.02¼	@	.04
Barium Dust	lb.	.05	@	.06
Barytes southern off-color,	ton	12.00	@	18.00
Western prime white	ton	23.00	@	—
imported	ton	27.00	@	36.00
Basofor	lb.	.04½	@	—
Blacks				
Arrow "Aerfloted"	lb.	.09	@	.13
Bone Black	lb.	.05½	@	.11
Carbon, compressed	lb.	.07½	@	.11½
Carbon, uncompressed	lb.	.07	@	.11
Drop Black	lb.	.06	@	.10
Lamp Black	lb.	.12	@	.40
Micronex	lb.	.08	@	.12
Velvetex carbon	lb.	.04	@	.07
Blanc fixe dry f.o.b. works	lb.	.04	@	—
Carrara filler	lb.	.01¾	@	.02
Catalpo (fact.)	lb.	.02	@	—
Chalk	ton	12.00	@	14.00
Clay, China, domestic	ton	8.00	@	9.00
Aerfloted Suprex	ton	9.00	@	20.00
Mineral Flour, c. l. fob mine	ton	20.00	@	23.00
Tensulite		15.00	@	—
Glues, extra white	lb.	.20	@	.29
medium white	lb.	.19	@	.25
common bone	lb.	.14	@	.15
Magnesia, carbonate	lb.	.07½	@	.10
Mica, powdered	ton	90.00	@	100.00
Rotten Stone (powdered)	lb.	.02½	@	.04½
Soapstone, powdered	ton	15.00	@	22.00
Starch, powdered	cwt.	3.30	@	3.70
Talc, domestic	ton	16.00	@	18.00
Velvetex	lb.	.04	@	.07
Whiting, commercial	cwt.	.85	@	1.00
English cliffstone	cwt.	1.50	@	—
Superfine	ton	10.00	@	12.00
Vansulite	ton	12.00	@	—
Wood pulp XXX	ton	45.00	@	—
Wood pulp X	ton	25.00	@	—
Zinc Carbonate	lb.	.10	@	.12

MINERAL RUBBER

Genasco (factory)	ton	50.00	@	52.00
Montezuma, solid	ton	28.00	@	36.00
Montezuma, granulated	ton	32.00	@	42.00
Paradura	ton	62.50	@	65.00
Pioneer, MR, solid	ton	41.00	@	43.00
Pioneer—granulated	ton	51.00	@	53.00
Robertson, MR solid	ton	34.00	@	80.00
M.R. (gran)	ton	34.00	@	80.00

SOFTENERS

Acids				
Nitric, 36 degrees	cwt.	5.00	@	5.25
Sulphuric, 60 degrees	ton	10.50	@	11.50
66 degrees	ton	15.00	@	16.00
Tartaric, crystals	lb.	.31½	@	—
Acids, Fatty				
Stearex	lb.	.10	@	.14
Stearic, single pressed	lb.	.10	@	.11
Double pressed	lb.	.11½	@	.12
triple pressed	lb.	.13½	@	.14
Alkalies				
Caustic soda, 76%	cwt.	3.76	@	3.91
Soda ash, 58% C.L.	cwt.	1.42½	@	1.45
Oils				
Castor, No. 3 bbls.	lb.	.12	@	.13
Corn, crude, bbls.	lb.	.09¾	@	.10
refined	lb.	.11	@	—
Cottonseed, crude		.08	@	—
Cycline	gal.	.27	@	.34
Dispersol A (light)	lb.	.15	@	.16
Dispersol B (dark)	lb.	.14	@	.15
Fluxrite	lb.	.05	@	.06
Glycerine, C.P. drums	lb.	.26	@	.26½
Linseed, Raw C.L. bbl.	lb.	.10½	@	.11½
Palm Lagos	lb.	.07¼	@	.07½
Niger	lb.	.07¾	@	.08
Vansulol	lb.	.10½	@	—
Para-Flux	gal.	.17	@	—
Peanut, domestic, crude	lb.	.11	@	—
Petrolatum, white	lb.	.08⅞	@	.09
amber	lb.	.03¾	@	.04
dark amber	lb.	.03⅜	@	.03½
Pine, steam distilled	lb.	.70	@	.72
Rapeseed, refined	gal.	.82	@	.83
Rosin, first rectified	gal.	.70	@	—
second rectified	gal.	.73	@	—
Resins and Pitches				
Pitch, Burgundy	lb.	.06½	@	.07½
coal tar	gal.	.05½	@	.06
pine	bbl.	9.00	@	10.00
Rosin, grade K	bbl.	10.75	@	—
Pigmentar	gal.	.33	@	.41
Tar Retort	bbl.	16.50	@	17.00
Solvents				
Acetone, pure	lb.	.14½	@	—
Alcohol denatured, No. 1 bbls.	gal.	.37½	@	.44½
Benzol, 90%	gal.	.28	@	—
pure		.29	@	—
Carbon bisulphide	lb.	.05½	@	.06¼
Carbon tetrachloride		.06¾	@	.07½
Motor gasoline, steel bbls.	gal.	.20	@	—
Naptha, V. M. & P.	gal.	.14	@	—
Turpentine, spirits	gal.	.65	@	.67
wood	gal.	.63	@	.64
Waxes				
Beeswax	lb.	.58	@	.60
Carnauba	lb.	.46	@	.50
Ceresin, white	lb.	.13	@	.14
Montan, crude	lb.	.07	@	.07½
Ozokerite, black	lb.	.30	@	—
green	lb.	.26	@	.30
Miscellaneous				
PSL Mold Solution	gal.	.75	@	.100

ANTI-OXIDANTS

Antox	lb.	.79	@	.83
Neozone	lb.	.74	@	—
Stabilite	lb.	.65	@	—
VGB	lb.	.55	@	.66

SUBSTITUTES

Black	lb.	.08	@	.14
White	lb.	.10	@	.16
Brown	lb.	.10	@	.15

VULCANIZING INGREDIENTS

Sulphur Chloride (drums)	lb.	.03½	@	.06
Sulphur flour,				
Superfine bags	cwt.	2.20	@	2.80
Superfine, bbls.	cwt.	2.55	@	3.10
100% pure, refined, bags	cwt.	2.60	@	3.15
bbls.	cwt.	2.95	@	3.50

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The Market Place

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Chemicals and Compounding Materials —

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LAMPBLACK
QUINOIDINE

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Grasselerator 552
Grasselerator 808

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Rubber Service Dept.
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ACCELERATORS
Di-ortho-Tolylguanidine, Diphenylguanidine, Methylene-para-toluidine; Formaldehydeaniline, Vulcanol, Thionex, Vulcone, Vulcanex

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THE MARKET PLACE Section Continued on Next Page

A Section Devoted to Listings of Leading Producers and Distributors of Raw Materials, Machinery and Equipment, and Supplies for the Rubber Industry.

The Market Place

Chemicals and Compounding Materials — Machinery and Equipment—Crude, Reclaimed and Scrap Rubber—Fabrics—Rubber Products — Consulting Engineers.

Chemical and Compounding Materials [continued]

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TIRES & TUBES
CRUDE RUBBER

STATISTICAL SECTION

AUTOMOBILES
GASOLINE

IT will be noted that new statistics for July and August, covering crude rubber consumption and imports, crude rubber on hand and afloat, rim inspection and tire and tube production, have been included in this section. Consumption of crude rubber during August, according to the Rubber Association, totaled 33,460 long tons, based on 100%, while imports totaled during August 29,691 long tons, according to a preliminary estimate by the Department of Commerce. During the first eight months of the present year imports exceeded consumption by 33,847 tons, while approximately 17,000 tons of this was re-exported, leaving a similar quantity as an increase in stock.

Stocks of crude rubber in London increased during the week ended September 10 by 986 tons, while during the week ended September 17, London stocks increased 516 tons. Rubber in Singapore and Penang at the end of August totaled 25,764, an increase of over 3,000 tons from July.

Rubber Association statistics relative to tire and tube production, inventory and shipments have been released for July. They show a uniform decrease from June figures, except in the case of inner tube shipments, which during July advanced over June, showing an increase of 238,000 units.

crude rubber from principal producing countries for the months of July and August have been added, as well as new statistics covering net imports into principal consuming countries.

New statistics covering exports of

PLAN OF THE SECTION

The statistics included in this section have been chosen for their constant importance to the rubber industry. The tables are reprinted in the same relative position in every issue, each table being kept current by the addition of new figures as soon as they become available. The section accordingly affords the most up-to-date, complete and convenient statistical service in the industry.

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U. S. Imports and Exports of Crude Rubber

	Gross Imports			Re-exports			Net Imports
YEARS	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons
1921	185,394	73,772,677	17.76	5,716	2,414,924	18.86	179,678
1922	301,076	101,843,188	15.10	4,809	1,921,828	17.84	296,267
1923	309,144	185,060,304	26.72	8,772	5,672,319	28.87	300,372
1924	328,056	174,231,331	23.71	10,309	6,057,637	26.23	317,747
1925	396,642	429,705,014	48.36	14,827	19,847,753	59.76	381,815
1926	413,338	505,817,807	54.63	17,671	22,470,583	56.77	395,667
1925:							
Jan.	32,898	22,406,756	30.41	1,162	963,598	37.02	31,736
Feb.	24,696	18,532,115	33.50	979	779,406	35.53	23,717
Mar.	33,072	25,146,691	33.94	1,345	1,105,119	36.69	31,727
Apr.	32,506	24,874,562	34.16	1,130	1,009,305	39.86	31,376
May	36,932	30,311,754	36.64	1,203	1,323,445	49.12	35,729
June	31,569	26,855,883	37.98	1,198	1,577,106	58.75	30,371
July	32,455	33,701,723	46.36	1,278	2,132,681	74.52	31,177
Aug.	33,412	39,834,348	53.22	1,131	1,623,258	64.08	32,281
Sept.	26,367	36,686,013	62.11	1,154	1,820,360	70.41	25,213
Oct	34,651	50,027,338	64.45	1,132	1,989,291	78.43	33,519
Nov.	37,755	56,271,963	66.54	1,605	2,898,930	80.65	36,150
Dec.	40,329	65,055,868	72.02	1,510	2,625,259	77.61	38,819
1926:							
Jan.	42,404	72,528,151	76.36	2,084	3,747,505	80.28	40,320
Feb.	32,865	58,733,370	79.78	1,430	2,280,168	71.17	31,435
Mar.	42,152	70,589,581	74.76	1,836	2,735,234	66.51	40,316
Apr.	34,544	48,742,539	62.99	1,128	1,605,093	63.58	33,416
May	29,756	36,896,080	55.35	1,052	1,558,987	66.17	28,704
June	24,900	34,498,561	61.85	1,105	1,371,217	55.41	23,795
July	35,820	33,061,470	41.20	1,554	1,743,854	50.09	34,266
Aug.	27,400	24,670,752	40.21	1,318	1,339,563	45.38	26,082
Sept.	37,112	32,625,032	39.02	1,437	1,519,870	47.20	35,675
Oct.	29,333	25,300,483	38.50	1,366	1,316,270	43.02	27,967
Nov.	38,925	34,661,631	39.97	1,482	1,320,461	42.00	37,443
Dec.	37,754	33,261,366	39.33	1,904	1,841,305	43.16	35,850
1927:							
Jan.	43,340	36,753,719	37.99	1,526	1,444,734	42.22	41,814
Feb.	28,338	23,110,257	36.41	2,451	2,277,297	41.47	25,887
Mar.	35,514	28,693,026	36.07	2,763	3,249,665	52.50	32,751
Apr.	46,202	37,284,806	36.15	1,575	1,428,425	40.45	44,627
May	36,543	30,998,657	37.87	2,782	2,501,562	41.74	33,761
June	33,045	27,833,770	36.28	1,775	1,550,592	38.99	31,270
July	37,678	31,678,259	37.53	1,958	1,560,853	35.58	35,720
Aug.*	29,691	22,838,112	35.77				
Sept.							

*Official estimate based on arrivals at New York and Boston.

U. S. Consumption of Crude Rubber

(Rubber Association of America statistics raised to 100 per cent—All figures in long tons)

Figures on Monthly Basis

	1921	1922	1923	1924	1925	1926	1927
January	5,045	16,938	30,106	29,058	29,638	32,196	31,518
February	5,955	14,767	30,149	25,736	29,761	31,136	30,187
March	9,190	21,408	36,629	28,385	33,498	32,936	36,141
April	13,084	19,294	29,085	27,129	34,139	32,696	35,871
May	16,023	23,246	36,155	25,845	35,322	29,364	34,592
June	16,142	31,713	24,272	22,753	35,822	28,598	33,801
July	18,310	24,522	17,685	23,396	36,053	27,577	29,219
August	23,649	29,361	20,359	28,982	35,909	34,533	33,460
September	16,705	24,410	17,594	31,497	31,691	32,904	
October	16,814	26,881	21,321	31,520	29,047	29,836	
November	14,105	24,950	20,437	27,289	28,853	28,080	
December	15,482	25,070	21,902	27,199	28,748	26,293	
Totals	170,504	282,560	305,694	328,769	388,481	366,149	

Figures on Quarterly Basis

Quarter	1921	1922	1923	1924	1925	1926	1927
Jan./Mar.			96,776	87,609	95,263	94,301	99,216
Apr./June	65,463	127,360	89,493	75,674	104,099	87,109	103,242
July/Sept.			55,621	83,813	99,493	93,793	
Oct./Dec.	105,962	155,067	63,617	92,656	85,789	83,212	
Totals	171,425	282,427	305,507	339,752	384,644	358,415	

Note—The Rubber Association estimates its monthly rubber consumption figures to be 90 per cent complete. Up until 1925 the quarterly figures were likewise estimated to be 90 per cent complete; beginning with 1925 an estimate of 92 per cent completeness has been used. These estimates have been used in raising the figures in this table to 100 per cent. The quarterly figures are generally regarded as the most authentic; the monthly figures may be accepted as preliminary.

Rubber Invoiced to the U. S.

(Reported by American Consuls—Quantities in Long Tons)

During the Week Ended	From Br. Malaya	From Ceylon	From Dutch East Indies	From London & Liverpool	Total
July 2	5,141	646	837	988	7,612
July 9	3,646	371	651	830	5,498
July 16	4,062	438	1,968	1,380	7,848
July 23	3,005	845	1,201	1,705	6,756
July 30	4,215	657	1,342	315	6,529
August 6	3,205	650	1,884	320	6,059
August 13	3,955	825	1,646	112	6,538
August 20	3,981	582	1,007	678	6,248
August 27	4,121	760	2,009	167	7,057
September 3	4,443	734	1,058	150	6,385
September 10	3,415	889	1,085	65	5,454

Daily Spot Closing Prices of Ribbed Smoked Sheet Rubber—*New York Market, in Cents per Pound*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Ave.
1925																																
January		39⅞	39⅞		39	39	39¼	38⅝	38⅝			37⅞	36½	36⅞		35	35⅞		34⅞	34⅞	35	35½	36¼			35⅞	35⅞				35⅞	36⅜
February		35¾	34⅞		34½	34½	35⅜	34⅜		35¼			35⅞	36			36⅞		35⅞	36⅜	36⅜			36⅛				35½	35⅞			
March		38⅞	33⅞		38⅞	39¾		40⅛	40¾																						
April		41¼	41¾		41⅞	42⅜	43⅛	42⅝	42⅝																						
May		45	45⅞		46⅞	45⅞	46⅞	45⅞	45⅞																						
June		69½	72		74⅞	75¼		73⅞	74																						
July		81⅛	81⅞		85⅞		90½	94⅜	99⅝																						
August		94½	95½		85¾	86¾		79		71¾																					
September		85¾	87¼		81¼				78¼																						
October		91¼	92		94½	97		99		101																					
November		—	99¾		98¼	100		100¼		99½																					
December		106¾	108½	107¾	107¼	108¼		108		109¾	106		105½		101																
1926																															
January		—	—	87	87¼	85½	86½	87½	87¾	—	88¼	88¼	85½	84½	82½	—	75½	75½	75½	75½	72	72½	—	68	67	67	69¾	70½	69	—	—	79½
February		67	67½	66¾	68	69	—	—	69	65	66	66	65½	63	62	60½	60	59	60	61	—	56	55	52	51	51¾	51	—	—	—	62¾
March		55	58	53	53½	57½			56	60	63	61½	61	62	61	60½	62	61	61½	61¼	61	61	60	59½	48	48	48	58½	58	61¼
April		59	—	59	59	58	56½	56½	53	49	51½	49	48½	47	47	48½	47	47½	47½	48	48	49	48½	46	46	45	45	48	48½	—	—
May		48½	50	50¼	49¼	49¾	49½	49	49	49½	49	48½	47¾	47½	47½	47½	47	47½	47½	47½	47½	47½	47½	47½	46¾	44	43	43	42	42	47¾
June		41½	42	42	41¾	41½	41½	42	42	41¾	42	41½	41	40	40	40	40	40	40	40	39	39	38	38	38	38	38	38	38	38	42½
July		42	—	42	—	41¾	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41	41	41	41¼
August		38¾	38½	40¼	40¾	—	39	40¼	40¼	40¼	40¼	40¼	40½	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼
September		40¼	40¾	43	43¼	42¾	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½
October		43	43	—	41¾	41¾	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½
November		41¼	—	41¼	41¼	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½
December		36¾	37½	37½	—	37	—	37	37	37	37	37½	—	37½	37¾	37¾	37¾	37¾	37¾	38	38	38	38	38	38	38	38	38	38	38	38	38¼
1927																															
January		—	—	38½	39	39¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾
February		37⅝	37⅝	37½	37½	—	—	37½	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝
March		39⅝	40	40¼	41	41	41	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾
April		41⅛	40	40¼	41	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼
May		—	—	40¼	40½	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾
June		40⅝	40¼	40¼	40¼	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½
July		35½	—	35¼	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾
August		35¼	35⅝	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼	35¼
September		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
October		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
November		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
December		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Spot Closing Prices—Ribbed Smoked Sheets

(New York Market)

Average Price per Pound for Years 1910-1921

Year	Cents	Year	Cents	Year	Cents
1910	206.60	1914	65.33	1918	60.15
1911	141.30	1915	65.85	1919	48.70
1912	121.60	1916	72.50	1920	36.30
1913	82.04	1917	72.23	1921	16.36

Average Monthly Price per Pound Since 1922

Months	1922 Cents	1923 Cents	1924 Cents	1925 Cents	1926 Cents	1927 Cents	1928 Cents
Jan.	18.82	32.73	25.86	36.71	79.50	38.75	
Feb.	16.12	35.14	25.29	36.01	62.25	38.25	
Mar.	14.53	34.21	22.83	41.00	59.00	41.04	
Apr.	15.99	32.48	22.51	43.64	51.25	40.86	
May	15.25	27.39	18.89	58.47	47.75	40.76	
June	15.11	26.88	18.81	77.26	42.50	37.25	
July	14.67	26.10	22.16	103.16	41.03	34.44	
Aug.	13.93	28.84	26.17	82.99	38.50	35.12	
Sept.	14.44	28.95	27.56	88.88	41.00		
Oct.	19.78	26.93	31.13	98.01	42.50		
Nov.	23.88	27.14	34.33	104.80	38.50		
Dec.	27.42	26.60	37.88	98.51	38.25		
Average for Year	17.50	29.45	26.20	72.46	48.50		

London Closing Prices of Ribbed Smoked Sheet

(In Pence Per Pound)

Fifth Restriction Year—Fourth Quarter

Day	Aug.	Sept.	Oct.	Day	Aug.	Sept.	Oct.
1	—	16¾		16	17⅜	16¼	
2	16⅞	16⅝		17	17⅜	16	
3	17	16⅝		18	17⅜	—	
4	17⅛	—		19	17⅜	16	
5	17¼	16⅝		20	17¼	15⅞	
6	17¼	16⅝		21	—		
7	—	16⅝		22	17¼		
8	17⅛	16½		23	17¼		
9	17⅛	16⅜		24	17¼		
10	17¼	16⅜		25	17		
11	17½	—		26	17		
12	17⅝	16¼		27	17		
13	17¾	16⅜		28	17		
14	—	16½		29	16⅞		
15	17⅜	16½		30	16¾		
				31	16⅞		

(The average price for the period for which daily prices are reported above is approximately 16.751 pence. The British Colonial Secretary has announced that only 60% of the standard production will be exportable from the restricted area during the next quarter if the price during the entire current quarter does not average at least 21 pence.)

Average Price in Previous Quarters

Quarter	1922-23	1923-24	1924-25	1925-26	1926-27
November-January	14.285	14.175	17.9983	46.709	19.265
February-April	16.858	12.917	19.356	28.103	19.696
May-July	14.242	10.947	38.469	21.001	18.165
August-October	14.944	14.632	43.269	20.199	

Spot Closing Cotton Prices

(Middling Upland Grade—New York Market)

Recent Daily Price Per Pound

Day of Month	Aug. Cents	Sept. Cents	Day of Month	Aug. Cents	Sept. Cents	Day of Month	Aug. Cents	Sept. Cents
1	18.25	23.10	11	19.70	——	21	——	
2	17.85	22.70	12	19.40	21.95	22	21.00	
3	17.00	22.60	13	18.90	22.10	23	21.40	
4	17.45	——	14	——	22.55	24	21.70	
5	17.10	——	15	19.40	21.40	25	21.55	
6	17.25	22.75	16	19.95	21.25	26	21.95	
7	——	22.70	17	19.95	21.25	27	22.60	
8	19.45	23.90	18	20.00	——	28	——	
9	19.95	23.60	19	20.45	20.55	29	23.25	
10	19.70	22.80	20	21.10	20.55	30	22.50	
						31	22.40	

Average Monthly Price Per Pound

Month	1925 Cents	1926 Cents	1927 Cents	Month	1925 Cents	1926 Cents	1927 Cents
Jan.	23.99	20.85	13.42	Aug.	23.72	18.57	20.04
Feb.	24.70	20.60	14.10	Sept.	23.79	17.02	
Mar.	25.64	19.35	14.32	Oct.	21.77	13.14	
Apr.	24.54	19.13	14.75	Nov.	20.94	12.86	
May	23.41	18.92	16.07	Dec.	20.06	12.68	
June	24.13	18.57	16.85	Average for Year	23.45	17.53	
July	24.68	18.71	18.00				

Stock of Crude Rubber in the U. S.

(All Quantities in Long Tons)

At	ON HAND			AFLOAT			AND AFLOAT ON HAND		
End of	1925	1926	1927	1925	1926	1927	1925	1926	1927
Jan.	60,870	55,198	76,172	36,759	46,296	45,312	97,629	100,434	121,484
Feb.	54,109	58,035	91,186	41,475	46,935	42,166	95,584	104,970	133,352
March	52,494	61,822	85,740	40,577	43,537	49,600	93,071	105,389	135,340
April	50,143	55,261	92,757	53,465	41,905	38,963	103,608	97,166	131,720
May	52,064	64,360	94,563	46,846	40,303	44,181	98,910	104,663	138,744
June	50,997	60,460	89,250	51,202	40,907	47,233	102,199	101,367	136,483
July	46,245	64,900	98,469	46,003	38,062	40,587	92,248	102,962	139,056
Aug.	42,354	60,870	96,148	41,254	37,360	40,937	83,608	98,230	137,085
Sept.	36,367	62,078		55,151	42,464		91,518	105,542	
Oct.	34,085	64,989		51,098	52,930		85,183	117,919	
Nov.	34,885	69,385		42,692	47,311		86,577	116,696	
Dec.	51,215	72,520		48,208	52,020		99,423	124,540	

(Rubber Association of America figures raised to 100%.)

Stock of Crude Rubber in London

(No. of tons in Wharves and Warehouses, including Latex)

At end of:	1920	1921	1922	1923	1924	1925	1926
January	19,300	56,573	67,252	73,498	57,460	27,172	9,994
February	18,329	59,439	67,623	70,483	56,732	23,425	10,005
March	18,969	63,913	66,670	63,438	55,647	18,104	13,750
April	20,072	68,759	68,637	58,770	54,559	12,949	18,951
May	20,921	70,403	70,146	54,439	51,615	5,895	20,896
June	22,517	69,408	71,597	51,050	51,115	5,318	23,894
July	25,346	71,065	71,515	49,937	52,073	4,258	27,727
August	30,674	73,211	72,112	48,427	49,700	4,619	30,764
September	35,504	72,175	70,977	54,523	44,011	5,453	35,077
October	41,743	69,229	68,536	58,891	37,523	5,086	42,141
November	45,550	70,786	68,548	60,074	33,593	3,869	44,057
December	50,652	69,792	72,299	60,246	29,488	5,697	48,921

At End of Recent Weeks

1926	First Saturday	Second Saturday	Third Saturday	Fourth Saturday	Fifth Saturday
December	44,395	46,349	47,324	48,382	——
1927					
January	48,948	50,756	52,484	53,662	54,786
February	55,740	56,939	56,962	58,659	——
March	59,945	61,516	61,300	63,167	——
April	62,634	63,861	65,033	65,511	67,034
May	68,187	68,041	66,668	67,054	——
June	67,105	67,454	66,894	64,486	——
July	63,917	64,163	63,511	62,819	63,626
August	64,177	64,557	64,842	64,259	
September	65,162	66,148	66,664		

Rubber in Singapore and Penang

(Stocks held by Dealers—Quantities in Long Tons)

End of	1925	1926	1927	End of	1925	1926	1927
Jan.	15,925	16,726	25,440	July	15,894	23,101	22,558
Feb.	17,320	13,653	26,766	Aug.	17,251	23,362	25,764
Mar.	17,261	18,389	27,844	Sept.	16,526	25,997	
Apr.	15,368	16,328	24,543	Oct.	15,346	26,614	
May	15,804	16,967	25,133	Nov.	19,788	25,486	
June	15,884	19,416	21,898	Dec.	18,840	26,443	

Rims Inspected and Passed in U. S.

(Tire and Rim Association Reports)

	Total	Per Cent Balloons		Total	Per Cent Balloons
1923	23,140,620	0.6	1925	26,001,664	66.8
1924	21,863,311	19.7	1926	24,199,524	78.8
1927			1927		
January	1,489,078	77.0	July	1,679,587	84.4
February	1,753,224	84.4	August	1,825,905	80.2
March	2,071,989	85.1	September		
April	2,060,868	88.0	October		
May	2,169,208	86.9	November		
June	1,871,538	77.0	December		

U. S. Consumption of Gasoline

(In Barrels of 42 Gallons)

MONTHS	1924	1925	1926	1927
January	11,918,000	14,386,000	17,582,000	17,888,000
February	9,626,000	13,210,000	15,814,000	18,240,000
March	10,961,000	14,890,000	19,302,000	22,464,000
April	14,583,000	19,013,000	20,848,000	23,371,000
May	15,889,000	20,459,000	24,213,000	26,579,000
June	16,421,000	20,724,000	23,803,000	27,799,000
July	18,610,000	22,879,000	24,752,000	29,784,000
August	19,825,000	22,323,000	26,912,000	
September	16,871,000	20,177,000	22,929,000	
October	18,029,000	19,826,000	23,973,000	
November	16,607,000	18,024,000	20,618,000	
December	15,663,000	17,954,000	21,419,000	
TOTAL	185,003,000	223,865,000	262,165,000	

U. S. Tire and Tube Statistics

(All Figures Represent Thousands)

AUTOMOBILE CASINGS

Figures for Recent Years

	1922	1923	1924	1925	1926
Production	40,932	45,259	51,633	60,845	61,237
Shipments	39,987	45,204	50,120	59,262	59,002
Inventory[2]	6,132	5,772	7,427	8,142	10,456

Figures for Recent Months

	PRODUCTION			SHIPMENTS			INVENTORY		
	1925	1926	1927	1925	1926	1927	1925	1926	1927
Jan.	4,740	4,587	4,965	4,013	2,974	4,932	7,949	9,947	10,432
Feb.	4,908	4,865	5,095	3,924	3,436	4,458	8,928	11,164	11,075
Mar.	5,276	5,456	6,276	4,657	4,561	5,701	9,510	12,004	11,583
Apr.	5,341	5,346	6,299	5,498	4,980	5,701	9,088	12,461	12,122
May	5,467	5,023	6,151	5,954	5,211	5,657	8,611	12,343	12,462
June	5,418	5,422	6,202	6,737	5,724	6,253	7,243	11,968	12,462
July	5,587	4,950	5,087	6,298	6,337	5,973	6,421	10,592	11,326
Aug.	5,607	5,872		4,760	6,744		7,261	9,732	
Sept.	5,007	5,706		4,569	6,040		7,681	9,318	
Oct.	4,505	5,103		5,580	4,544		6,670	9,917	
Nov.	4,229	4,324		3,671	3,733		6,955	10,297	
Dec.	4,760	4,683		3,601	4,718		8,142	10,456	

AUTOMOBILE INNER TUBES

Figures for Recent Years

	1922	1923	1924	1925	1926
Production	50,850	60,116	70,706	82,614	76,618
Shipments	49,673	59,072	68,016	81,004	71,591
Inventory[2]	7,643	8,425	11,052	11,313	16,200

Figures for Recent Months

	PRODUCTION			SHIPMENTS			INVENTORY		
	1925	1926	1927	1925	1926	1927	1925	1926	1927
Jan.	6,343	6,809	5,337	5,576	3,723	6,016	11,570	14,361	15,585
Feb.	6,339	6,825	5,658	4,971	3,736	5,120	13,023	17,090	16,075
Mar.	7,000	7,030	7,184	5,711	4,987	6,157	14,236	19,131	17,096
Apr.	6,851	6,554	7,373	6,704	5,051	6,359	13,618	20,674	17,801
May	6,846	6,149	6,737	8,040	6,304	6,140	12,501	21,141	18,389
June	6,942	6,171	6,306	9,032	6,898	6,832	10,409	20,243	17,858
July	7,544	5,729	5,284	9,140	8,569	7,070	8,635	17,267	16,004
Aug.	7,618	7,424		6,923	9,579		9,271	15,462	
Sept.	7,254	7,590		6,665	7,762		9,950	15,312	
Oct.	6,612	6,208		7,845	5,474		8,726	15,929	
Nov.	6,266	4,852		5,406	4,045		9,491	16,604	
Dec.	6,999	5,277		4,991	5,463		11,313	16,200	

(1) Rubber Association of Amreica figures, raised to 100%. The Association estimates its figures to be 75% representative or complete when issued and that basis has been accepted when preparing the statistics in this table.

(2) Held by manufacturers at end of period indicated.

Automobile Production

	Passenger Cars			Trucks		
	Total	United States	Canada	Total	United States	Canada
1920	1,883,158	1,799,522	83,636	322,039	311,531	10,508
1921	1,514,000	1,452,902	61,098	147,550	142,402	5,148
1922	2,397,827	2,302,923	94,904	251,434	244,285	7,149
1923	3,719,164	3,589,936	129,228	378,288	361,078	17,210
2914	3,262,764	3,144,999	117,765	378,106	360,625	17,481
1925	3,817,639	3,678,328	139,311	498,019	475,941	22,078
1926						
January	284,703	272,922	11,781	33,461	29,763	3,698
February	334,524	319,763	14,761	41,685	37,608	4,077
March	399,105	381,116	17,989	49,233	44,848	4,385
April	401,836	383,907	17,929	53,887	50,314	3,573
May	394,569	373,140	21,429	51,343	47,838	3,505
June	358,360	339,542	18,818	47,043	44,110	2,933
July	328,816	315,863	12,953	41,847	39,592	2,255
August	393,040	380,258	12,782	47,907	45,404	2,503
September	363,537	350,913	12,624	51,299	46,428	4,871
October	300,142	289,547	10,595	46,965	42,890	4,075
November	226,278	219,504	6,774	39,410	36,356	3,054
December	143,413	137,361	6,052	30,002	28,302	1,700
TOTAL	3,928,323	3,766,336	161,487	534,082	493,453	40,629
1927						
January	208,718	196,973	11,745	40,874	37,243	3,631
February	275,458	260,632	14,826	41,947	38,118	3,829
March	360,754	341,665	19,089	48,590	45,056	3,534
April	373,961	353,071	20,890	48,216	44,495	3,721
May	374,259	352,268	21,991	47,890	44,173	3,717
June	290,188	273,718	16,470	43,003	40,265	2,738
July	242,144	233,425	8,719	32,249	29,981	2,268
August	281,464	271,325	10,139	34,552	31,715	2,837
September						
October						
November						
December						

Exports of Crude Rubber from Principal Producing Countries

	BRITISH MALAYA[1]								DUTCH EAST INDIES[5]							
	Gross Exports	Imports	Gross Exports Minus Imports	Ceylon[2]	India & Burma[3]	Sarawak[4]	British North Borneo[3]	Siam[4]	Java & Madura	Sumatra E. Coast	Other D.E.I.	Indo-China[3]	Amazon Valley[4]	All Other[3]	World Total[7]
1925	316,825	158,022	158,803	49,566	10,082	5,424	5,377	1,718	32,930	46,344	57,822	5,067	16,765	7,856	406,955
1923	252,016	70,432	181,584	39,971	6,416	5,705	4,237	2,962	42,446	64,497	80,347	6,688	23,165	9,065	429,366
1924	259,706	108,524	151,182	39,997	7,697	6,699	4,621	5,377	46,757	65,499	120,626	7,881	25,298	13,797	517,523
1926:															
Jan.	30,452	10,237	20,215	4,246	1,273	416	289	275	4,444	6,125	10,614	549	1,213	1,279	49,310
Feb.	30,440	8,306	22,134	5,120	725	488	450	253	4,524	5,717	6,854	544	2,759	1,978	51,556
Mar.	35,012	14,800	20,212	5,177	1,113	792	561	418	4,527	5,566	11,984	573	2,126	1,899	54,948
Apr.	23,727	10,565	13,162	3,766	590	679	374	293	4,226	4,598	6,285	410	2,318	1,529	38,230
May	31,231	10,604	20,627	3,944	691	927	410	279	4,440	5,358	8,737	502	1,353	1,464	48,732
June	30,624	11,764	18,860	4,208	452	779	512	275	4,444	6,125	10,614	449	1,213	1,279	49,310
July	28,824	15,280	13,544	4,422	938	911	420*	439	4,618	5,612	13,112	1,521	1,565	1,148	48,250
Aug.	34,625	13,595	21,030	5,666	521	890	420*	316	4,132	5,699	10,390	378	1,888	1,097	*52,427
Sept.	35,913	13,972	21,941	6,015	651	888	420*	457	4,065	6,568	11,391	691	2,156	822	*56,055
Oct.	39,367	15,203	24,164	5,672	634	805	420*	385	4,058	6,998	11,491	661	1,904	1,023	*58,215
Nov.	34,302	12,201	22,101	4,228	1,110	685	420*	285	3,988	5,816	9,422	718	1,911	1,259	*51,943
Dec.	36,811	14,716	22,095	6,498	1,176	895	420*	338	5,054	7,117	12,786	790	3,821	714	*61,704
	391,328	151,243	240,085	58,962	9,874	9,155	5,299*	4,027	52,186	71,413	121,231	8,203	24,298	16,017	*620,750
1927:															
Jan.	34,946	14,995	19,951	6,697	921	959	500*	304	4,184	6,705	10,541	941	2,885	981	*55,569
Feb.	27,528	11,607	15,921	3,571	1,469	552	500*	360	4,707	6,526	10,634	675	2,082	1,098	*48,095
Mar.	41,346	17,464	23,882	7,142	1,124	997	500*	432	5,657	7,003	12,490	733	3,203	1,791	*64,954
Apr.	29,041	13,069	15,972	3,349	723	984	500*	526	4,666	5,530	10,035	557	2,374	1,495	*46,711
May	31,393	15,491	15,902	3,124	760	786	500*	348	5,430	5,528	14,099	586	2,431	1,207	*50,701
June	32,607	14,706	17,901	3,348	856	1,100	500*	409	4,818	5,519	9,402	772	1,030		
July	23,947	12,697	11,250	4,018		859	333*		4,771	6,140	11,663	519	1,713		
Aug.	30,371	17,105	13,266									716			
Sept.															
Oct.															
Nov.															
Dec.															

(1) Mayalan net exports cannot be taken as production, since imported rubber is largely wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 115 tons in 1923, 1,117 in 1924, 3,618 in 1925, and 3,263 in 1926. (2) Ceylon Chamber of Commerce statistics until 1926; rubber exported as latex is not included—such shipments were equivalent to 18 tons in 1923, 93 tons 1924, 6 tons 1925, and about 20 tons in 1926. (3) Official statistics. (4) Imports into Singapore and Penang. (5) Exports from "Other D.E.I." are chiefly wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 2,342 tons in 1923, 1,008 tons 1924, 2,239 tons 1925, and about 60 tons in 1926. (6) Calculated from official import statistics of prinipal consumnig countries, viz., United States, United Kingdom, France, Germany, Italy, Belgium and Netherlands. This figure includes guayule rubber. (7) This total includes the third column for British Malaya, "Gross Exports minus Imports," and all the figures shown for the other territories. *Figure is provisional; final figure will be shown immediately it becomes available.

Net Imports of Crude Rubber into Principal Manufacturing Countries

(*Long Tons*)

	United States*	United Kingdom	France (h)	Germany	Canada (ac)	Japan (ac)	Italy	Russia (ce)	Australia (cd)	Belgium (d)	Netherlands	Scandinavia (abcdf)	Spain (g)	Czechoslovakia (abcd)	World Total
1919	236,977	42,671	17,685	5,584	6,395	9,753									
1920	248,762	56,844	13,885	11,890	11,746	5,297	9,894	75	1,002	3,995	2,771	3,149	2,418	9	342,378
1921	179,678	42,087	15,135	21,920	8,124	21,713	6,128	62	1,815	3,840	5,510	2,292	2,008	567	370,641
1922	296,267	11,724	24,352	27,546	9,207	15,934	3,906	165	1,014	1,705	1,022	1,279	2,245	569	300,562
1923	300,372	12,700	27,392	18,519	13,277	15,372	6,430	2,493	2,643	172	-3,807	1,778	589	567	395,885
1924	317,747	-11,550	30,446	22,727	14,299	19,571	8,489	2,986	1,649	2,184	792	2,528	630	1,128	408,018
1925	381,815	4,061	32,956	33,937	19,683	11,117	8,764	2,346	3,124	2,688	-807	3,178	944	1,370	414,847
1926	395,667	84,865	34,240	22,775	20,229	18,125	11,412	7,088	4,757	2,930	875	3,149	1,155	1,558	516,493
1926:							9,809	6,529	9,021	2,498	2,670	4,046	1,299	1,870	613,643
January	40,345	6,886	2,832	703	2,188	892									
February	31,435	3,114	3,063	1,113	1,865	741	760	332	438	76	163	303	89	134	56,141
March	40,316	8,907	3,941	1,342	2,079	864	1,041	643	512	143	88	397	145	75	44,375
April	33,416	8,275	4,121	1,781	1,615	1,868	1,037	832	547	129	227	377	109	161	60,868
May	28,705	6,773	2,519	1,848	1,239	1,010	865	402	505	71	93	335	130	193	53,670
June	23,795	5,894	2,196	1,655	1,188	1,465	705	200	468	186	241	225	60	192	44,371
July	34,266	6,768	2,352	2,202	1,552	1,447	1,070	983	636	269	215	303	123	103	39,895
August	26,081	7,327	2,457	2,110	1,888	1,284	800	132	702	295	480	292	121	115	51,524
September	35,675	8,843	1,774	2,029	1,355	1,922	796	655	1,275	303	594	336	90	151	45,347
October	28,110	8,082	3,376	2,423	1,865	2,396	819	472	1,241	283	429	317	91	138	55,388
November	37,673	9,247	2,719	3,007	1,548	3,380	645	585	1,004	301	2	360	100	121	49,370
December	35,850	4,749	2,890	2,562	1,847	856	832	568	916	194	-18	358	90	181	60,695
1927:							439	725	777	248	156	443	151	306	51,999
January	41,815	10,192	3,284	2,481	1,936	1,227									
February	25,886	7,692	3,263	3,103	2,620	1,902	672	803	929	296	181	316	139	100	64,371
March	32,752	9,049	2,050	3,475	3,760	1,578	601	907	460	502	153	336	146	210	47,781
April	44,627	7,875	2,310	2,393	1,509	2,181	852	784	780	454	86	385	137	127	56,026
May	33,761	2,896	2,006	3,380	2,519	1,084	781	1,972	762	448	58	230	177	218	65,541
June	31,270	2,282	2,387	3,632	2,086	798	918	887	694	633	-57	335	155	223	49,434
July	35,720	1,116		2,946	2,104	1,505		1,506	557	575	-16	243	164	183	
August								415	900		66				
September															
October															
November															
December															

a—Including gutta percha. b—Including balata. c—Re-exports not deducted in monthly statistics. d—Including some scrap and reclaimed rubber. e—United Kingdom exports to Russia. f—Including Norway, Sweden, Denmark and Finland. g—United Kingdom and French exports to Spain except in years prior to 1925. h—French imports have been reduced 12 per cent in order to eliminate imports of gutta percha and to reduce to basis of net weight. *United States imports of guayule are not included in this compilation; such imports amounted to 4,305 tons in 1926 and averaged about 400 tons monthly during the first six months of 1927.

BOOK REVIEWS

R. T. VANDERBILT COMPANY'S HANDBOOK OF RUBBER TECHNOLOGY. Sixth edition. 164 pages, loose leaf. Distributed free of charge from the company's office, 50 East 42nd St., New York, N. Y.

One need only examine the one hundred sixty-four pages of the new edition of this handbook of rubber, in which the six pages of index are as long as the original modest publication issued in 1919, to realize the contribution which a progressive distributor has made to the technology of the rubber industry.

The book is a happy departure from the usual type of notebook or brochure for it does not give one the impression of being first and foremost a missionary for the sale of the distributor's products. Less than one-fifth of its pages is devoted to a description of these products, and it is essentially a compendium of recent advances in rubber technology, with numerous tables of value to those engaged in the manufacturing end.

In this new edition, as before, the various subjects have been written by well-known authors with special knowledge of their subjects, and the addition in the new edition of articles by eight European technologists shows the painstaking and exhaustive manner in which the handbook has been compiled with a view to rendering it authoritative. With its circulation of six thousand copies in America and two thousand copies in Europe, it is becoming an international publication, and there is no rubber chemist or technologist who will not profit by studying it at least in part.

Aside from its informational value, the publication of this handbook is of great importance as a proof that there are distributors of raw material who are aware of the needs and interests of the rubber technologists, who are in intimate contact with progress in the rubber industry and who are aiming to improve raw materials and processes by mutual interchange of information and of ideas.

JOHN M. BIERER.

* * * * *

REPORT OF COMMITTEE D-9 ON ELECTRICAL INSULATING MATERIALS. Published by the American Society for Testing Materials. 1927. 132 Pages.

Committee D-9 of the American Society for Testing Materials held three meetings during the past year and the report of its activities and recommendations are embodied in this publication. All of the methods of testing insulating materials prepared by the Committee as well as the annual report presented at the June meeting of the Society at French Lick, Ind., are included in this booklet. Standards and tentative standards now in force are appended to the report.

Rubber chemists will be interested in the chapter devoted to standard methods of testing molded insulating materials. These tests are intended to apply to all solid insulating materials that are formed in molds by the application of pressure, either with or without heat. Another chapter on tentative methods of testing sheet and tape insulating materials, except rubber insulating tape, to determine dielectric strength, may be of interest to rubber chemists.

The publication may be obtained from the Society at 1315 Spruce street, Philadelphia.

* * * * *

MODERNTYPE WORM GEARING. Published by Foote Bros. Gear & Machine Co., Chicago. Catalog 400. 24 Pages.

"Moderntype" worm gearing is the latest addition to the IXL line of worm gears manufactured by Foote Bros. Gear & Machine Co. This catalog contains a history of the development of worm gearing from the earliest days, with data, illustrations and tables on the company's present "Moderntype" worm gearing. The company states that its product can be used in innumerable places in the specialized process machinery used in converting raw materials to finished products, such as rubber.

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